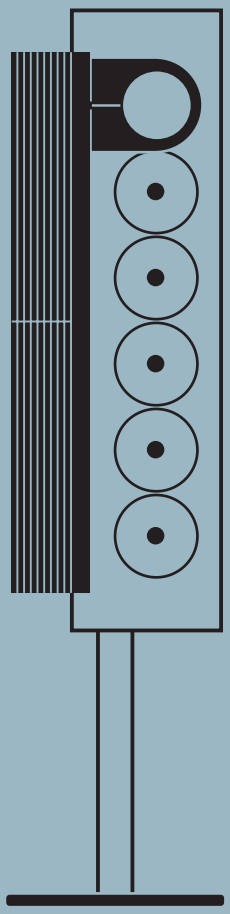
BeoSound 9000 MKIII

Type 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2580

Service Manual
English, German, French



BANG & OLUFSEN

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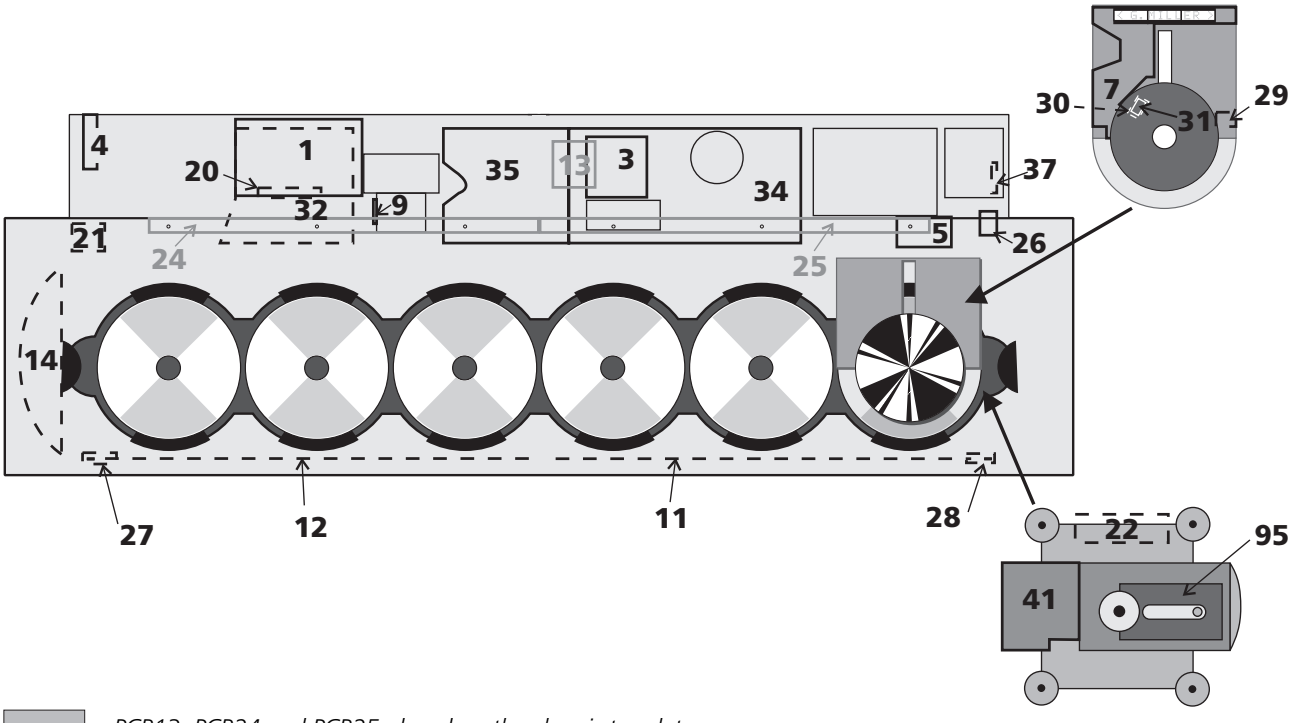
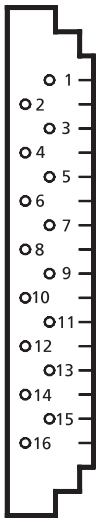


= *PCB13, PCB24 and PCB25 placed on the chassis topplate*

SPECIFICATION GUIDELINES FOR SERVICE USE	BeoSound 9000 MKIII
With FM and AM range and RDS	Type 2571 (EU), 2572 (GB), 2573 (USA-CDN), 2574 (J), 2575 (AUS),
	2576 (TWN), 2577 (KOR), 2580 (LAT)
Operation	Direct keyboard
	Beo4, BeoLink 1000
Mechanical functions	
Change from playing CD1 to playing CD6	
(Lid closed and known CD's)	< 6.5 sec., typical 4 sec.
Position of CD	Typical ±1°
Tuner	
Number of Programmes	60
Stereo / Mono selection	Automatic / manual
Tuner, FM section	
Range	87.5-108 MHz
	76-90 MHz f. type 2564
Aerial impedance	75 ohm
Usable sensitivity mono (30 dB)	Typical 11dBf - 1µV
50 dB quieting stereo	≤ 41dBf
Signal-to-noise at 65 dBf mono	≥ 69dB
Signal-to-noise at 65 dBf stereo	≥ 64dB
Frequency response	20-15000Hz
Distortion + noise mono	≤ 0.6%
Distortion + noise stereo	≤ 0.6%
Intermodulation stereo	Typical 0.1%
Stereo channel separation	Typical 30dB
Subcarrier product rejection	≥ 50dB
Tuner, AM section	
Range	LW 153-279 kHz f. type 2571, 2572, 2575, 2576, 2577
	MW 522-1611 kHz f. type 2571, 2572, 2575, 2576, 2577
	MW 530-1710 kHz f. type 2573, 2580
	MW 522-1629 kHz f. type 2574
Antenna	Loop 18.1µH (Special)
LW sensitivity 20 dB S/N ratio	Typical 66dBµV/m (2mV/m)
MW sensitivity 20 dB S/N ratio	Typical 60dBµV/m (1mV/m)
Harmonic distortion	Typical 0.4 %
CD Player	
Number of CD's	6
Disc types	12 cm (5"), 8 cm (3") with adaptor
Frequency range	20-20.000 Hz ±1dB
Signal-to-noise ratio A-weighted	Typical 101dB
Dynamic range	≥ 98 dB
Harmonic distortion	≤ 0.1%
Channel separation	≥ 50 dB
Channel difference	≤ ±1dB
Converter system	Bitstream
Preamplifier section	
Harmonic distortion	≤ 0.1%
Frequency range ±1dB	10-20000Hz
Channel separation	≥ 50dB
Source separation	≥ 80dB
Signal-to-noise A-weight	≥ 90dB
Volume control	≥ 90dB
Bass control	7.0dB ±2dB at 100Hz
Treble control	7.0dB ±2dB at 10kHz

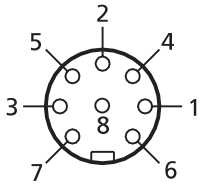
Connections

Master Link



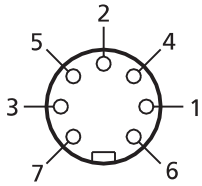
Pin 1	Data-, -0.5 V ±0.2 V in relation to Data+
Pin 2	Data+, +0.5 V ±0.2 V in relation to Data-
Pin 3	ML connect > 3 V
Pin 4-6	+supply voltage, +7 V to +15 V
	(in stand-by +3 V to +15 V)
Pin 7-10	Not used
Pin 11	-supply voltage, -7 V to -15 V
	(in stand-by -2 V to -15 V)
Pin 12	+supply voltage, +7 V to +15 V
	(in stand-by +3 V to +15 V)
Pin 13	Audio L- in/out, 2 V Bal, in relation to Audio L+,
	Rin 4.4 MW, Rout 150 Ω
Pin 14	Audio L+ in/out, 2 V Bal, in relation to Audio L-,
	Rin 4.4 MW, Rout 150 Ω
Pin 15	Audio R- in/out, 2 V Bal, in relation to Audio R+,
	Rin 4.4 MW, Rout 150 Ω
Pin 16	Audio R+ in/out, 2 V Bal, in relation to Audio R-,
	Rin 4.4 MW, Rout 150 Ω
Shield	GND

Power Link



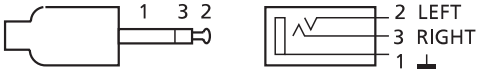
Pin 1	Power up (ON = >2.7 V -1mA)
Pin 2	Signal GND
Pin 3	Audio L out 0 V to 2 V RMS
Pin 4	Speaker ON (ON = >2.7 V -1 mA)
Pin 5	Audio R out 0 V to 2 V RMS
Pin 6	Datalink out (High = >4 V, Low = <0.2 V)
Pin 7	Data GND
Pin 8	PL+ ON

Audio Aux Link



Pin 1	Audio L out 1 V RMS, Rout 1 kΩ
Pin 2	GND
Pin 3	Audio L in 0.25 V RMS to 2 V RMS, Rin 47 kΩ
Pin 4	Audio R out 1 V RMS, Rout 1 kΩ
Pin 5	Audio R in 0.25 V RMS to 2 V RMS, Rin 47 kΩ
Pin 6-7	Not used

Headphones

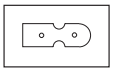


Ø 3.5 mm, 220 W

Digital output CD

AES / EBU
IEC 958
0.5Vpp, 75W, 1%

Mains



Cable included
Type 2571, 2572, 2577, 2580 – 230V AC
Type 2573, 2576 – 120V AC
Type 2574 – 100V AC
Type 2575 – 240V AC

Power frequency	50-60 Hz
Power consumption Stand.by	Typical 1.0W
Power consumption	Typical 15W

Dimensions	
W x H x D	86.9 x 7 x 30.1 cm
Weight	11.5kg
Finish	Black, aluminium

Optional accessories	
Beo4	Type 1624, 1625 (I)
Wall bracket horizontal	Type 2054
Wall bracket vertical	Type 2063
Bracket	Type 2053
Stand, adjustable in two heights	Type 2065
Cable cover	Type 2062
AM loop antenna	8720047
FM antenna	8720048

Type	Transformer	PCB5 Mains Relay	PCB34 Power Supply	PCB1 FM/AM	Mains cable
2571 EU	8013551 EU-230V AC	8005661 EU	8000512 EU	8000462 EU	6100273
2572 GB	8013551 EU-230V AC	8005661 EU	8000512 EU	8000462 EU	6100329
2573 US	8013549 US-120V AC	8005664 US	8000536 US	8000462 EU	6100307
2574 JAP	8013548 JAP-100V AC	8005661 EU	8000512 EU	8000535 JAP	6100331
2575 AUS	8013550 AUS-240V AC	8005661 EU	8000512 EU	8000462 EU	6100332
2576 TWN	8013549 US-120V AC	8005664 US	8000536 US	8000462 EU	6100307
2577 KOR	8013551 EU-230V AC	8005661 EU	8000512 EU	8000462 EU	6100386
2580 LAT	8013551 EU-230V AC	8005661 EU	8000512 EU	8000462 EU	6100273

Subject to change without notice

BRIEF OPERATION GUIDE
For more detailed operation see User's guide.

Closeup operation:

Loading CDs

▲ Press to raise the glass door

▲ Press to lower the glass door
or
CD Press to lower the door and start playing

CD playback

CD Press to play a CD

▲ Press to play the next track on a CD
or
▼ Press to play the same track again or press twice to play the previous track

PAUSE Press to pause playback

CD Press to resume playing

Random

RANDOM Press to display [RANDOM ON] and cut in the random play function

RANDOM Press twice to display [RANDOM OFF] and cancel the random play function

● Press to switch to stand-by

Choosing a sequence of discs

CD Press to start playback of a CD

SELECT Press SELECT and [SELECT DISC] will appear on the display

Press the direct CD selection buttons next to the CDs you want to include…

SELECT Press SELECT to start clearing a sequence and play all six CDs
then
CLEAR Press to clear the sequence

Programming a series of tracks for one CD

CD Press to play CD

EDITING Press to scan the CD [EDITING?] appears on the display
then
OK Press to start scanning the tracks

▲ Press to include a track number in the series
or
▼ Press to exclude a track number from the series

[EDITING OK] appears on the display when you have included or excluded the last track…
then
OK Press to accept the track series

To clear a track series…

Choose the CD whose track series you want to clear
then
EDITING Press to access the programming option
then
CLEAR Press to clear the track series altogether

Playing edited CDs

CD Press to start playback of a CD
then
EDIT Press to display [EDIT ON] and start edited playback

EDIT Press twice to play a CD in full and cancel EDIT – [EDIT OFF] appears on the display

Positioning CDs

Load and adjust a CD manually…

Then press the direct CD selection button next to this CD to move the carriage to the CD …
then
SELECT Press to access the positioning function for CDs
then
SELECT
then
OK Press to store the position for this CD

Repeat this procedure for all the CDs you have loaded…

If you want to clear the positions for a CD, move the carriage to the CD in question…

SELECT Press to access the positioning function to clear the position
then
SELECT
then
CLEAR Press to clear the position

Naming CDs

CD Press to play CD
then
NAMING Press to access the naming function
then
▲ Press to reveal the characters or numbers one by one
or
▼
then
OK Press to move to next character position
then
OK Press to store the name

CD Press while you are naming CDs or track series in order to automatically store the name and exit the naming function

To clear a name, follow this procedure…

NAMING Press to access the naming function
then
CLEAR Press to clear the name
then
CD Press to return to normal source operation

Listing CDs

CD Press to play CD

NAMING Press to access the naming list [CD LIST] appears briefly, then the name of the current CD appears
then
NAMING

▲ Press to list the names one by one and return to names further up the list
or
▼

CLEAR Press to clear a name while the appropriate name is displayed

CD Press to return to normal source operation

Playing your radio programs

RADIO — Press to turn on the radio

▲ or ▼ — Press to step through your radio programs

● — Press to switch to stand-by

Presetting radio stations

RADIO — Press to turn on the radio

TUNE — Press to start the tuning function

AM/FM — Press to select [AM] or [FM], switches from one to the other, check display for an indication of which one you have chosen

then

▲ or ▼ — Press to search for a radio station up or down the frequency band

then

OK — Press to accept the station you have found

P. NO. — Press to change the displayed program number

then

▲ or ▼ — Press to select for a program number – up or down

then

OK — Press to store your new radio program – [STORED] appears on the display

Fine tuning a radio station

RADIO — Press to turn on the radio program you want to fine tune

TUNE — Press to start the fine tuning function

then

TUNE

▲ or ▼ — Press to fine tune your program towards a higher or lower frequency

then

OK — Press to accept your fine tuned program

then

OK — Press again to store program and program number

Mono/stereo reception

RADIO — Press to turn on the relevant radio program

TUNE — Press to choose [MONO] or [STEREO]

then

TUNE

then

TUNE

then

▲ or ▼ — Press to switch from stereo to mono

OK — Press to store your new tuning on the program number

Clearing presets...

RADIO — Press to turn on the radio

▲ or ▼ — Press to search for program number

CLEAR — Press to clear the program

then

OK — Press to confirm the clearing of the radio program

Naming radio programs

RADIO — Press to turn on the radio program you want to name

NAMING — Press to start the naming function.
The first of the twelve character positions blinks, indicating that you can start "writing" a name

▲ or ▼ — Press to reveal the characters one by one
Press to reveal previously shown characters

then

OK — Press to move to the next character position

then

OK — Press to store the name of the radio station [NAMING OK] will appear on the display

or

RADIO — Press to store the name and exit the naming function
You can press RADIO at any time to store and exit the naming function

To clear a name...

NAMING — Press to access the naming function

then

CLEAR — Press to clear the name

Playing auxiliary sources

A. AUX — Press to select extra equipment

Adjusting sound

VOL ∧ — Press to raise the volume

VOL ∨ — Press to lower the volume

TREBLE — Press to access treble

BASS — Press to access bass

BALANCE — Press to access balance

▲ or ▼ — Press to raise or lower the treble and bass levels; or adjust the balance between the left and the right speaker

LOUDNESS — Press to see the status of the loudness adjustment function – [LOUDNESS ON] or [LOUDNESS OFF]. Press LOUDNESS again to change the setting

OK — Press to accept all sound levels - [SOUND OK?] appears on the display

then

OK — Press to store all sound levels

If you have not stored your sound adjustments...

RESET — Press to reset the sound levels to their previously stored settings

Switching displays, example

RADIO — Press to turn on the radio

OK — Press repeatedly to change the radio display indication

Programming Timers

TIMER — Press to start programming timers

then

▲ or ▼ — Press to choose a source for your Timer or choose a Timer stand-by

then

OK — Press to accept the Timer

Then program when you want the Timer to start and stop...

▲ or ▼ — Press repeatedly until you have found the exact time for starting a Timer play

then

OK — Press to accept start

Repeat the procedure with the ▲ and ▼ buttons and OK to program the exact timer for stopping a Timer

To program a [SINGLE DATE] Timer...

▲ or ▼ Press to display the date you want to program a Timer for

then

OK Press to accept the selection

then

OK Press to store your Timer programming and return to normal source operations

Checking or clearing Timers

CHECK Press to check your timers

then

▲ or ▼ Press to see timer programming number, source and program number of individual timer entries

OK Press repeatedly to display the details of a particular programming

When the display reads [OK ?]

then

▲ or ▼ Press to display [NEXT ?] to see your next timer programming entry

then

OK Press to see your next entry – If there are no more entries, [NO MORE], will appear on the display

CLEAR Press clear while information regarding a timer programming is displayed on the display – [CLEARED] will appear on the display after pressing CLEAR

Setting and using the built-in clock

CLOCK Press to call up the built-in clock

then

▲ or ▼ Press to set time, date/month or year…

then

OK Press to accept the changes and reveal the next display - Repeat this setting procedure for date/month and year…

When you have set or changed the year, the display now reads [CLOCK OK?]

then

OK Press to store your new setting of the clock

CLOCK Press to show the clock

CLOCK Press to see the date and year

To display the clock permanently…

CLOCK Press when Date and Year is displayed and change the display to time and ON e.g. [14:40 ON] – press again to cancel the permanent showing of the clock e.g. [14:41 OFF].

Option programming Beo4

hold ● while pressing LIST Until the Beo4 display reads OPTIONS?

then

GO

LIST Until the display reads A:OPT

then

0 Disable the remote control function

or

1 Enable the remote control function

Option programming BeoLink 1000

SOUND 0 STORE Disable the remote control function

or

SOUND 1 STORE Enable the remote control function

Automatic demonstration

The product can be brought into automatic demonstration mode in which it plays back 90 randomly chosen tracks. Each track is played back for 20 seconds.

Load six CD's with at least ten tracks each.

Bring the product into stand-by.

Press: SHIFT 9 1 9 9 6.
The remote control terminal must be in audio mode.
(SHIFT is found under LIST on Beo4)

The automatic demonstration can be stopped by bringing BeoSound 9000 into stand-by, which is done by actuating stand-by on the product.

During the automatic demonstration the sound will be muted. Demute the product if you want sound.

Locking of glass lid

The glass lid can be locked so that it cannot be operated on the product.

Press: SHIFT 9 0 3 6 9.
The remote control terminal must be in audio mode.

The display reads: LOCK.

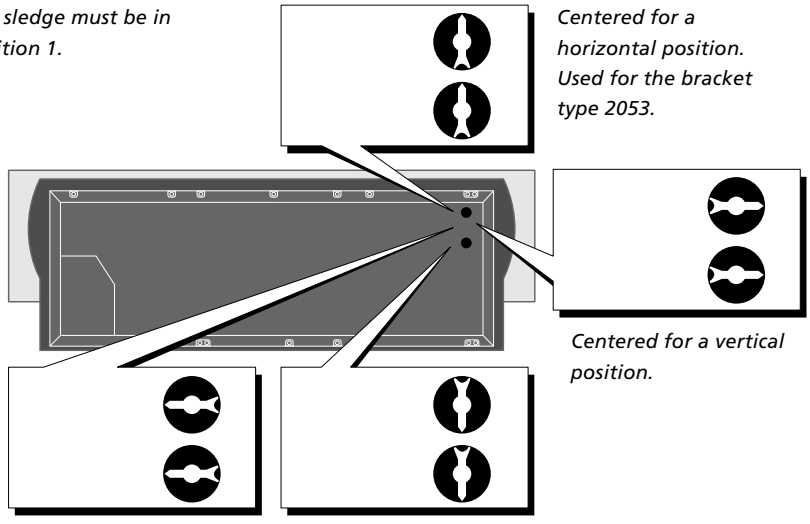
The function is stopped by pressing: SHIFT 9 0 3 6 9.
The remote control terminal must be in audio mode.

SHIFT is found under LIST on Beo4

The display reads: UNLOCK.

Centering the CD drive mechanism

The sledge must be in position 1.



Centered for a horizontal position. Used for the bracket type 2053.

Centered for a vertical position.

Centered for a flat or near flat position. This is the factory setup.

Centered for a horizontal position. Used for the bracket type 2054.

The PIN-code system

Activate the PIN-code system

While the BeoSound 9000 is in stand-by mode you can set up the PIN-code.

▼ ▼ **PAUSE** — Press ▼ twice followed by PAUSE to activate the PIN-code function.

NEW PIN — The display shows NEW PIN for 1.5 sec.…

PIN ____ — …then you can enter a PIN-code

▲ ▼ — Press to select a digit*

OK — Press to accept the digit

The digit is replaced by a ✱ and the next underscore blinks. Continue to enter the last three digits in the same manner.

If you wish to change the entered digits...

RESET — Press to start entering from the beginning

When the PIN-code has been entered...

OK — Press to accept the PIN-code. The display shows

CONFIRM — CONFIRM for 1.5 sec.…

PIN ____ — …then re-enter the PIN-code

OK — Press to confirm the PIN-code

STORED — The display shows that your setting is stored

If an incorrect code is entered the second time you must set up the PIN-code from the beginning.

Change or delete your PIN-code

While the PIN-code function is turned on you can always make changes to the PIN-code.

▼ ▼ **PAUSE** — Press ▼ twice followed by PAUSE to activate the PIN-code function

PIN ____ / NEW PIN? — Enter the current PIN-code. The display shows NEW PIN?

▲ ▼ — Press to choose from the two options

NEW PIN? / PIN OFF? — NEW PIN? or PIN OFF?

Select NEW PIN? to change your PIN-code

PIN ____ — Enter the new PIN-code

OK — Press to accept the new PIN-code. The display

CONFIRM — shows CONFIRM for 1.5 sec.…

PIN ____ — …then re-enter the new PIN-code

OK — Press to confirm the new PIN-code

STORED — The display shows that your new PIN-code is stored

Select PIN OFF? to delete your PIN-code

DELETED — The PIN-code function is disabled and the display shows DELETED for 3 sec.

For security reasons it is only possible to change or verify the PIN-code five times within a period of 3 hours. If an incorrect code is entered five times, BeoSound 9000 is turned off, and must be left in stand-by mode for 3 hours, before you may try again.

Using your PIN-code

When a PIN-code has been programmed, and the BeoSound 9000 has been disconnected from the mains for more than 30 minutes, you must enter the PIN-code when the BeoSound 9000 is turned back on.

PIN ____ — Enter the PIN-code

▲ ▼ — Press to select a digit

OK — Press to accept the digit

RADIO 1 — When the PIN-code has been entered the display returns to the relevant source display e.g. RADIO 1

If an incorrect PIN-code is entered the display will show ERROR and you may try again. After the fifth try, the BeoSound 9000 is turned off, and must be left in stand-by mode for 3 hours, before you can try again.

Did you forget your PIN-code?

Should you forget your PIN-code you can require a five-digit Master Code from your Bang & Olufsen retailer.

When you have received a Master Code…

PIN ____ — When the display is open for PIN-code input…

▼ / PIN _____ — Press the ▼ button for more than 3 seconds to change the display to fit 5 digits

PIN _____ — Enter the Master Code

▲ ▼ — Press to select a digit

OK — Press to accept the digit

DELETED — The display shows that the PIN-code lock is off

When the Master Code is entered, the BeoSound 9000 can be used without entering the code again.

*NOTE!: It is also possible to enter the digits using the number keys 0 – 9 on your Beo4 remote control.

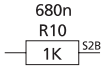
Explanation of diagram

Type numbers of transistors and ICs are indicated on the diagrams. If the position is followed by an asterisk the spare part number must always be used because the component in question has been specially selected, e.g. IC4*.

Component print and coordinate system

The largest PCBs have component prints and a coordinate system on both the primary and the secondary side.
On the diagrams every component has a coordinate number.
This indicates in which coordinate on the PCB the component is situated. The coordinate numbers are written in smaller print types than the position numbers.

= C27 is placed on the primary side in coordinate 1A.



= R10 is placed on the secondary side in coordinate 2B.

Control circuit

In certain control circuits the active mode is indicated by a function term or by an abbreviation. This may be e.g. $\overline{\text{ST.BY.}}$ = low in the stand-by mode or ST.BY. = high in the stand-by mode.

Wiring connections

The wiring connections on the diagrams are assembled in 'bundles'.
The individual wires are provided with one of the following codes:

INTERNAL CONNECTION ON ONE DIAGRAM PAGE

Internal connections on a diagram page are indicated by a number.
The bend of the wire indicates in which direction the other end of the wire is found.

CONNECTION TO ANOTHER DIAGRAM PAGE

A connection to another diagram page is indicated by a number as well as by a letter of the diagram to which the connection leads.

Ground symbols

Three different ground symbols are used in the set.

= Ground

= Chassis

= Coarse ground

Symbol of safety components

When replacing components with this symbol, components with identical part numbers must be used. The new component must be mounted in the same way as the one replaced.

Measuring conditions

All DC voltages have been measured in relation to ground with a voltmeter with an input impedance of 10 Mohms.
The DC voltages are stated in volts (V), e.g. 0.7V.
All oscillograms and AC voltages have been measured in relation to ground with an oscilloscope or a voltmeter with an input resistance of 1Mohm.
AC voltages are stated in millivolts (mV), e.g. 660mV.

Caution

The use of any controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.

The black and yellow label on the compact disc player serves as a warning that the apparatus contains a laser system and is classified as a class 1 laser product. The apparatus must be opened by qualified servicemen only.

CD laserdiode

Wavelength	780 nm ±20 nm, 30°C
Effect	2 mW ±0.1 mW, 30°C

Lithium battery

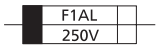
ADVARSEL
LITHIUMBATTERI - EKSPLOSIONSFARE
UDSKIFTNING MÅ KUN FORETAGES AF EN SAGKYNDIG
OG SOM BESKREVET I SERVICE MANUAL
WARNING
LITHIUM BATTERY - RISK OF EXPLOSION
TO BE REPLACED BY QUALIFIED SERVICEMAN ONLY
AND AS DESCRIBED IN THE MANUAL

WARNING

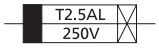
Short-circuit and overcharging of some types of lithium batteries may result in a violent explosion.
When replacing the lithium battery in this set, note the following:
Use only batteries of the same make and type as mentioned in this service manual (see page 3.9).
Place the battery exactly like the old one.

Explanation of the fuse symbols used in the set

Replace with the same type 1 ampere 250 volts quick acting fuse.

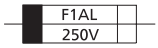


Replace with the same type 2.5 ampere 250 volts slow acting fuse.

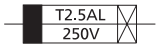


Explanation des symboles de fusible utilisés dans l'appareil

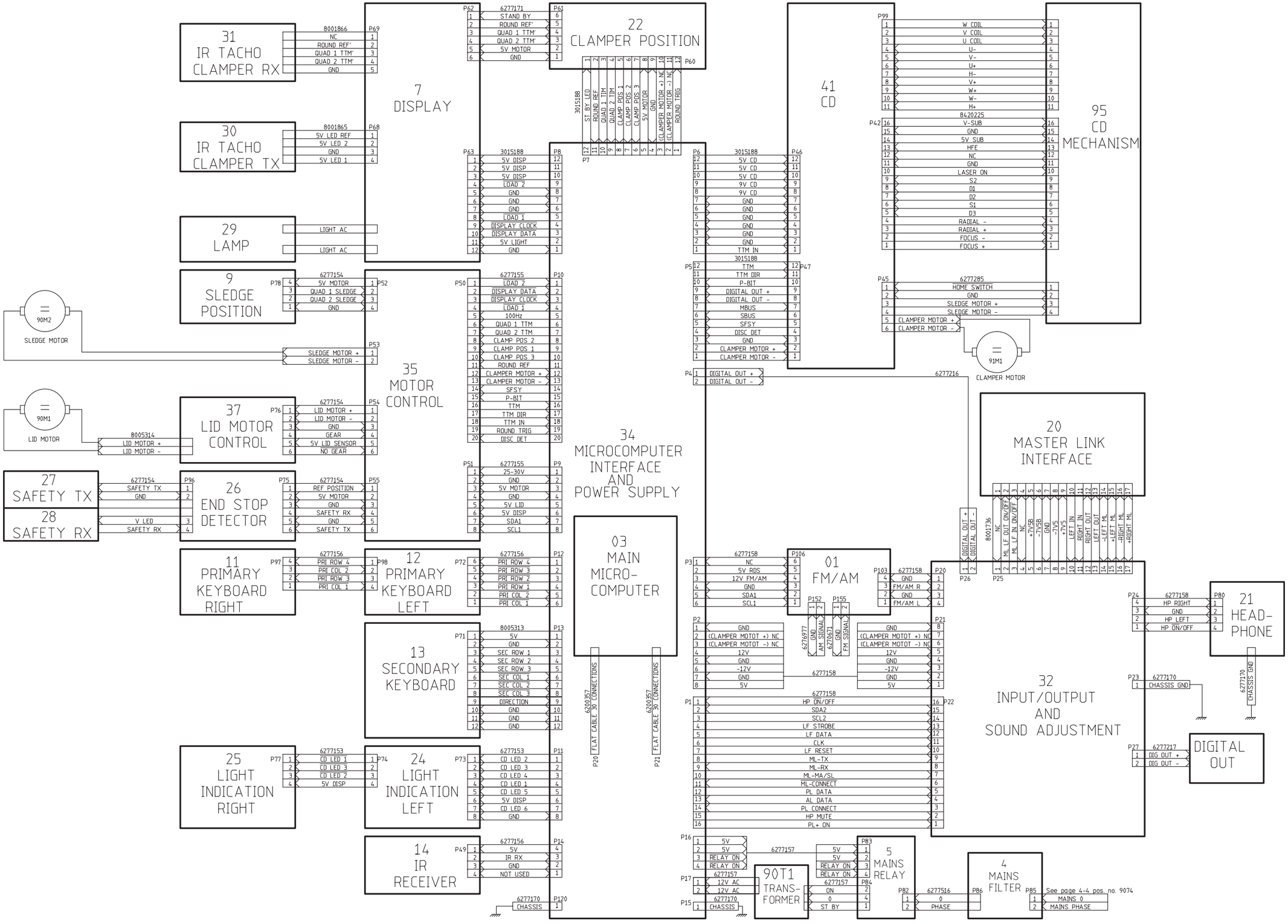
Remplacer par un fusible rapide de même type et de 1 ampères 250 volts.



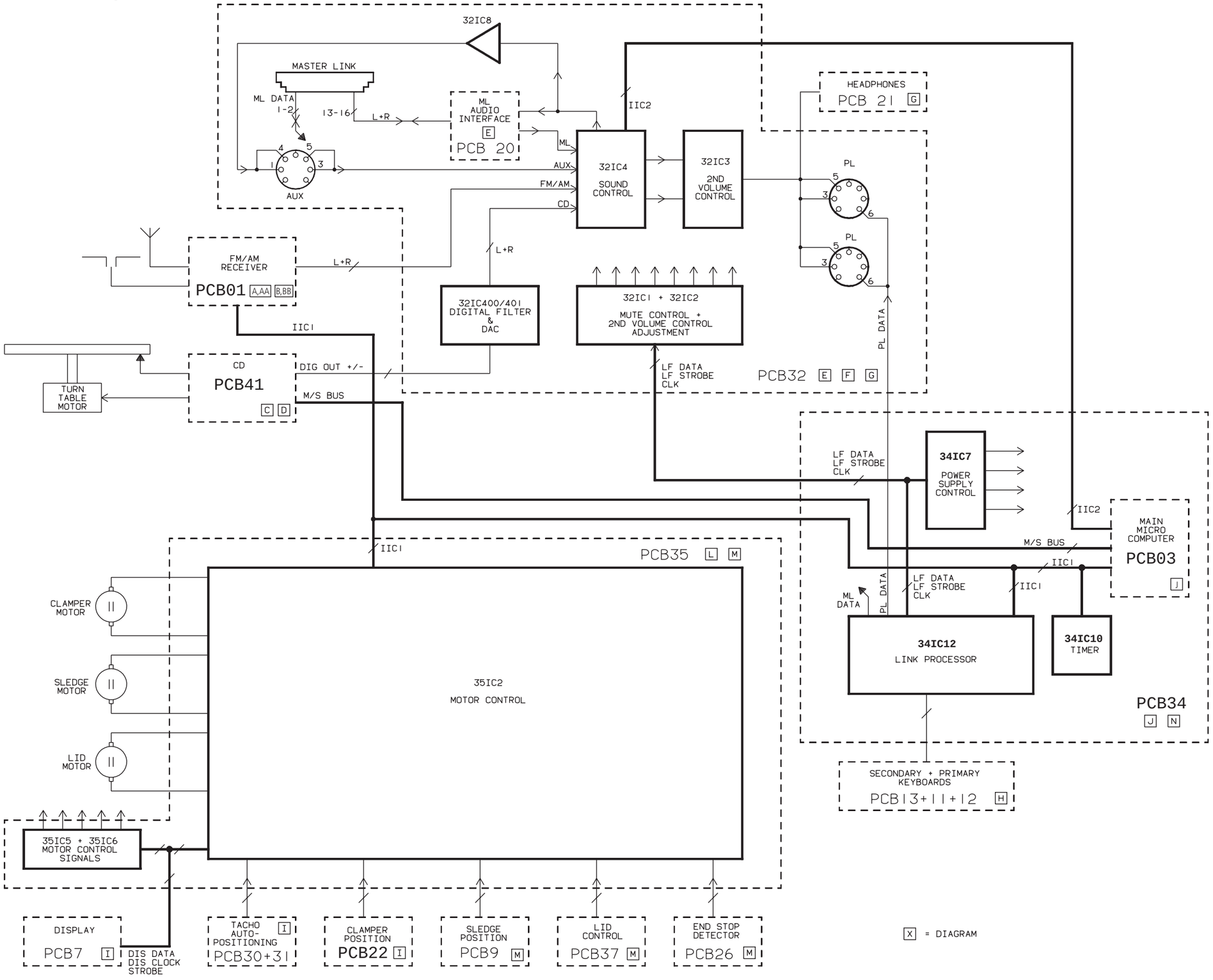
Remplacer par un fusible retardè de même type et de 2.5 ampères 250 volts.



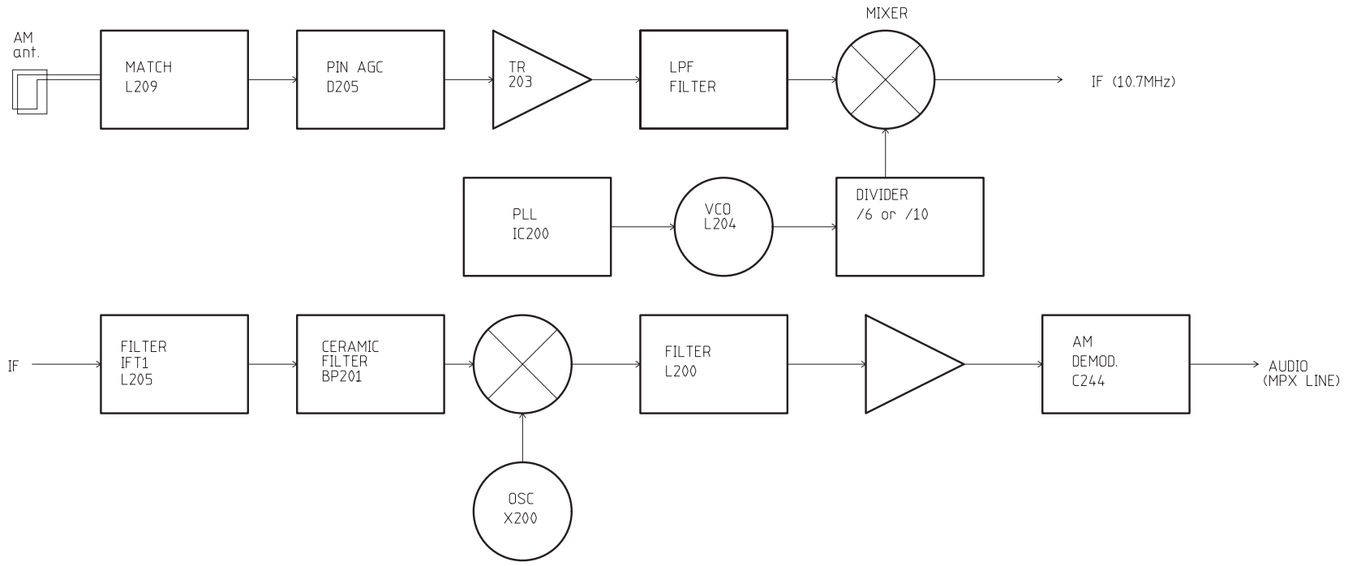
Wiring diagram



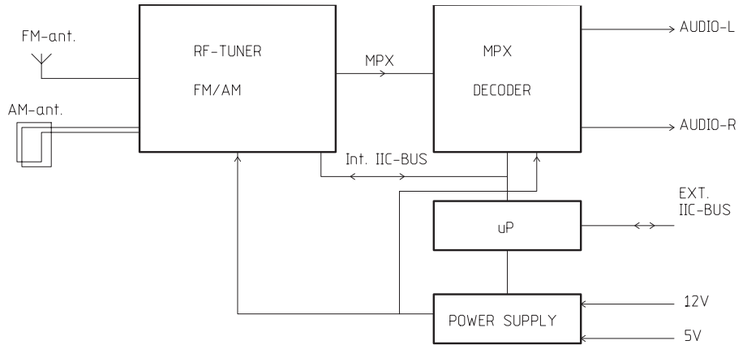
Overall block diagram

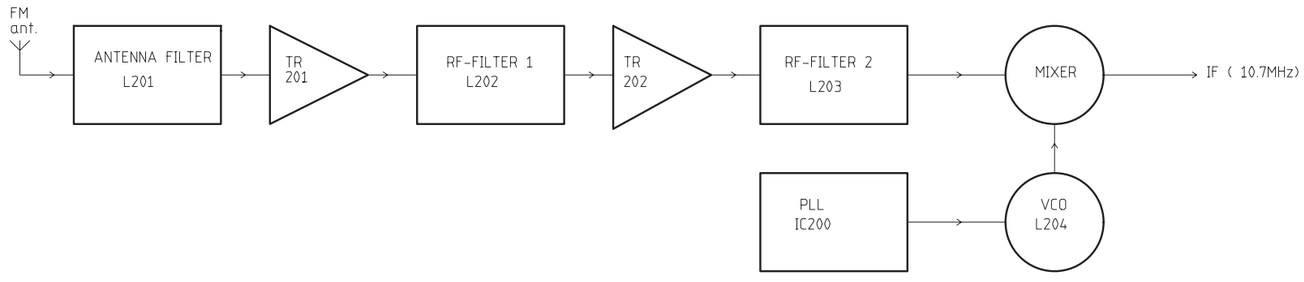


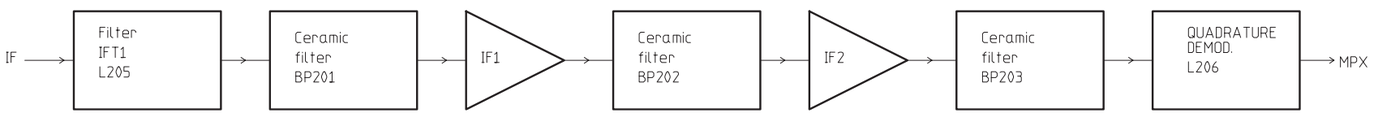
Block diagram for AM



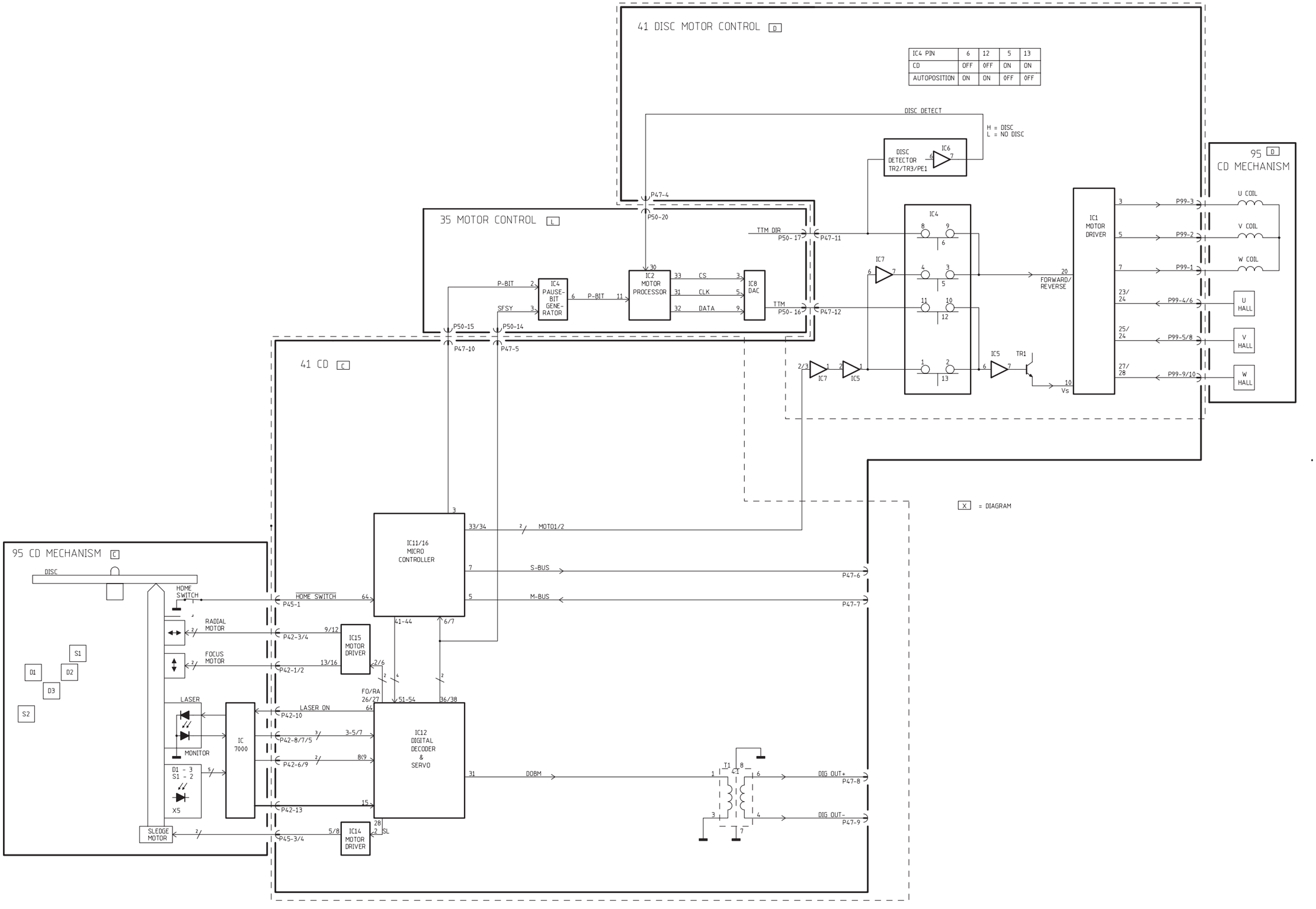
Block diagram for Frontend Tuner

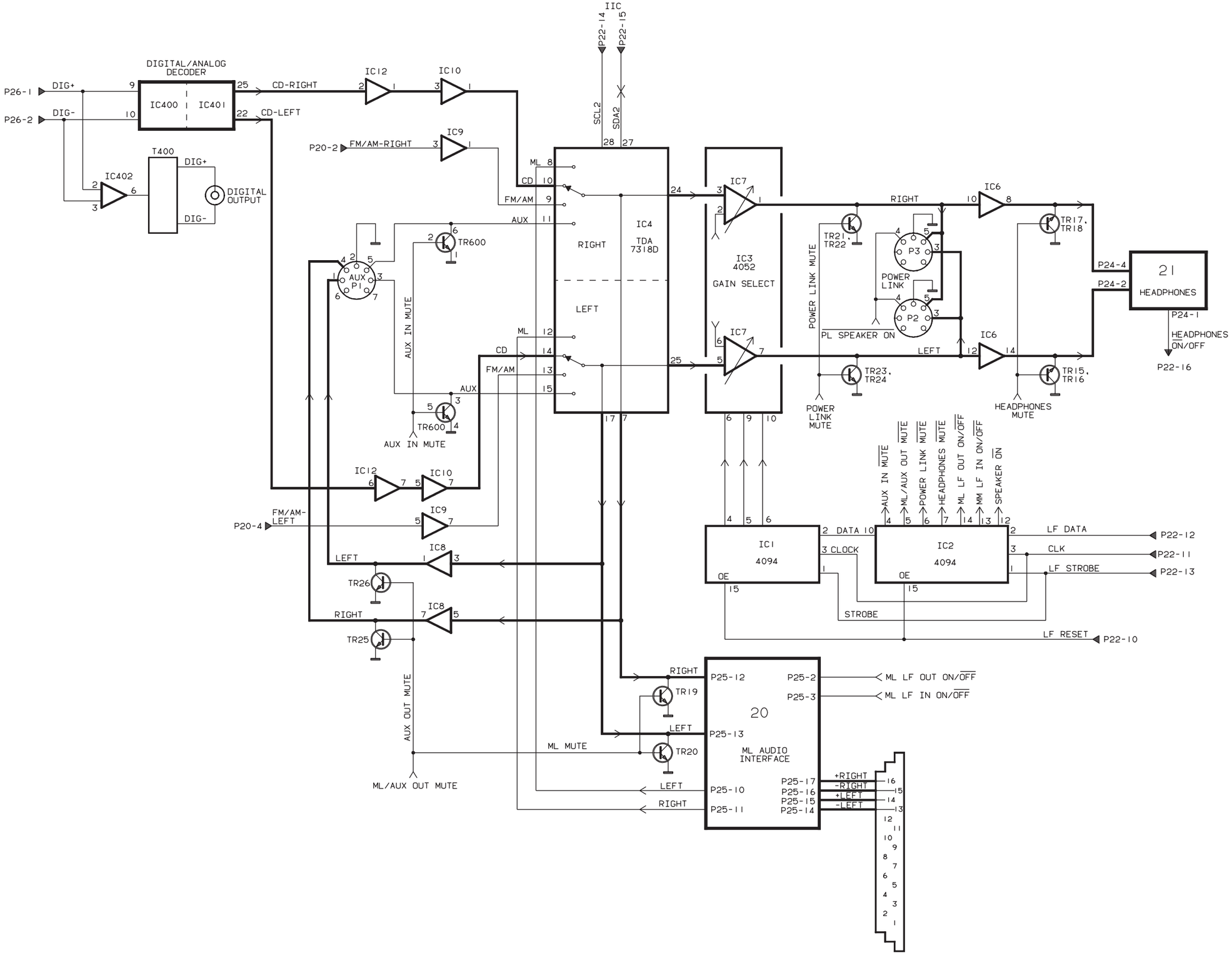




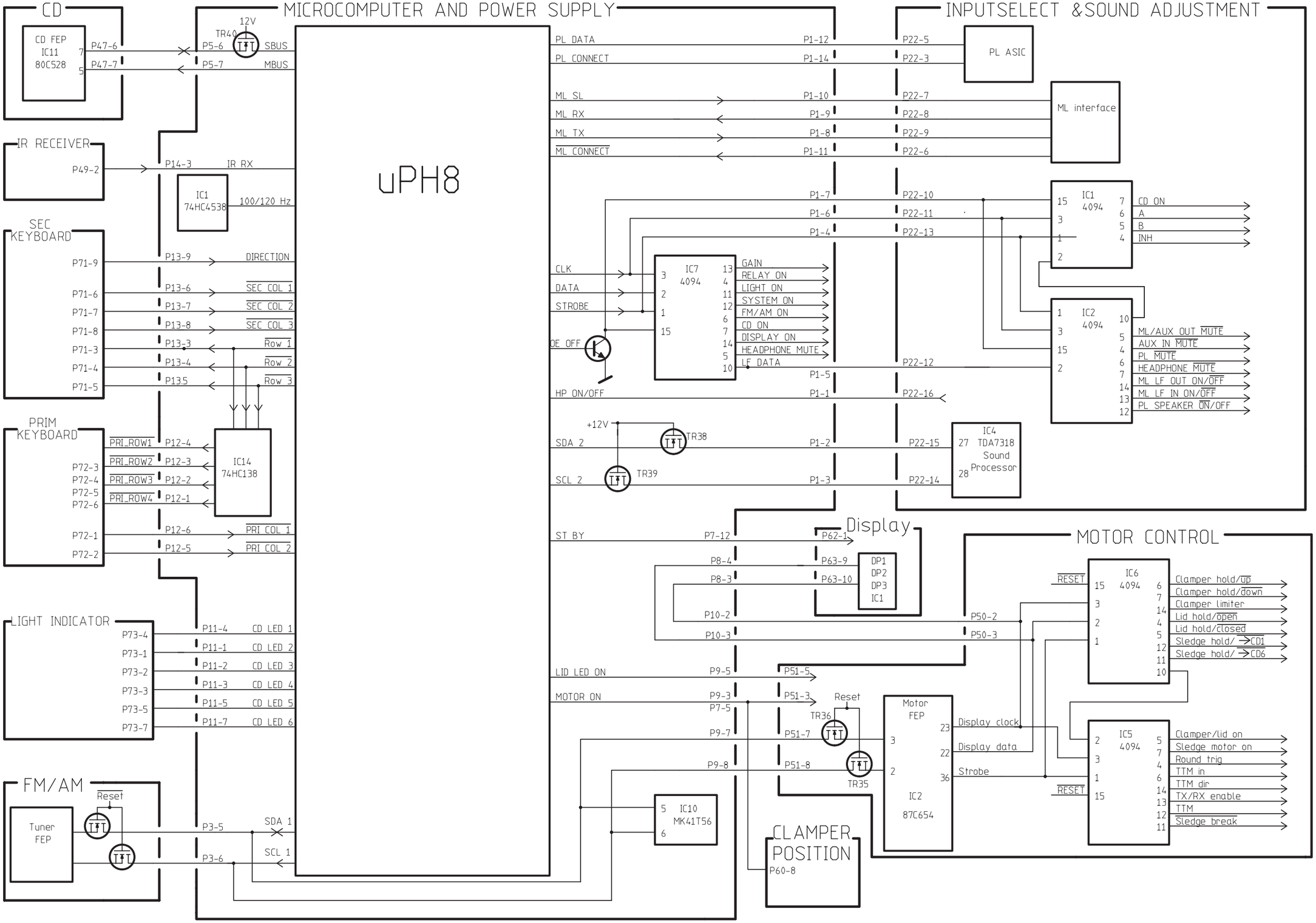


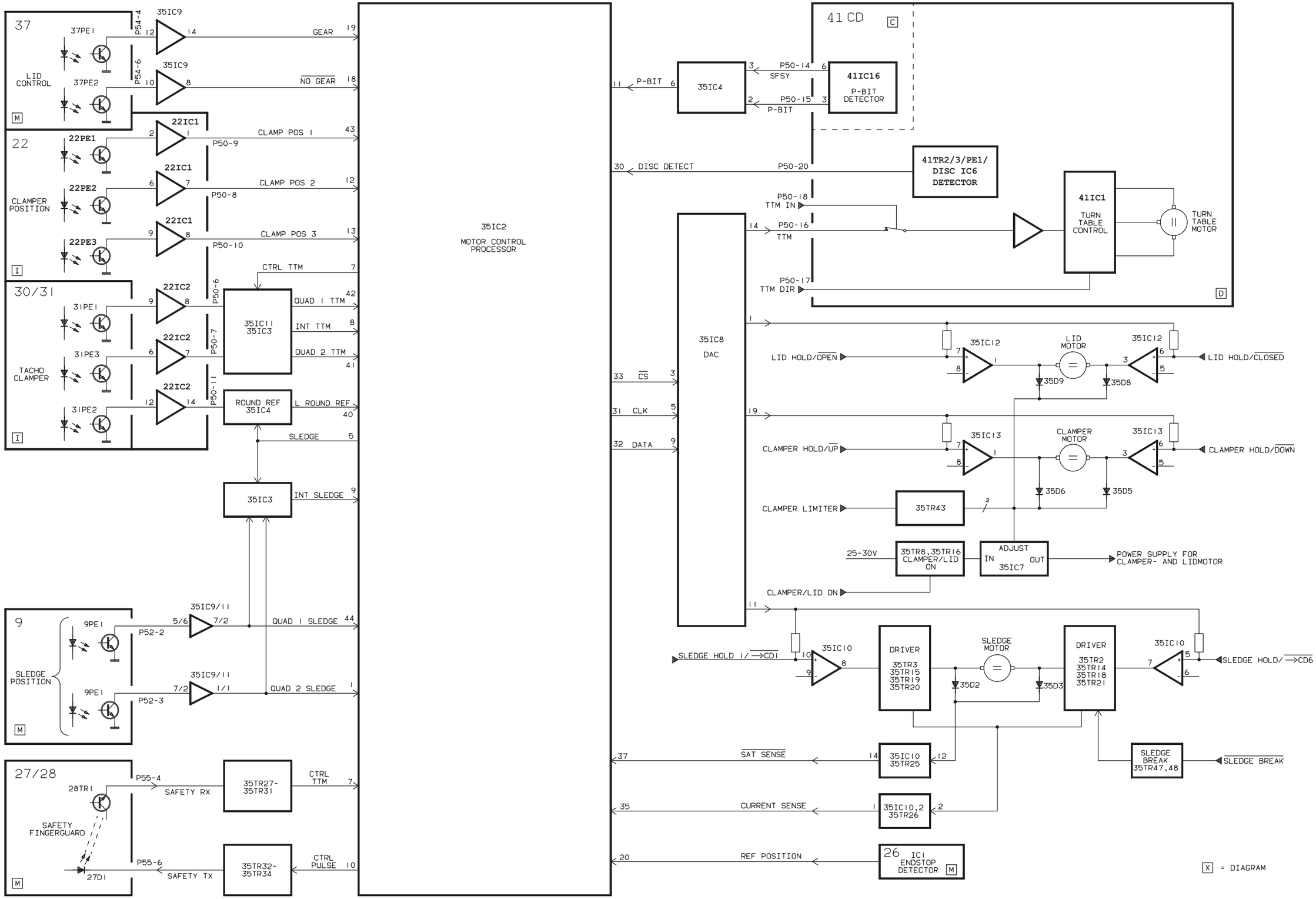
Block diagram for CD




IIC
P22-14
P22-15
SCL2
SDA2
DIGITAL/ANALOG DECODER
IC400
IC401
P26-1
DIG+
P26-2
DIG-
CD-RIGHT
CD-LEFT
IC12
IC10
IC9
P20-2
FM/AM-RIGHT
T400
IC402
DIGITAL OUTPUT
ML
CD
FM/AM
AUX
IC4
TDA 7318D
RIGHT
LEFT
IC7
IC3
4052
GAIN SELECT
IC6
TR21, TR22
TR17, TR18
TR23, TR24
TR15, TR16
POWER LINK MUTE
POWER LINK
PL SPEAKER ON
HEADPHONES MUTE
P3
P2
P24-4
P24-2
21
HEADPHONES
P24-1
HEADPHONES ON/OFF
P22-16
AUX P1
TR600
AUX IN MUTE
FM/AM-LEFT
P20-4
IC8
TR26
TR25
AUX OUT MUTE
ML/AUX OUT MUTE
TR19
TR20
ML MUTE
20
ML AUDIO INTERFACE
P25-12
P25-13
P25-10
P25-11
P25-2
P25-3
P25-17
P25-16
P25-15
P25-14
ML LF OUT ON/OFF
ML LF IN ON/OFF
+RIGHT
-RIGHT
+LEFT
-LEFT
IC1
4094
IC2
4094
DATA
CLOCK
STROBE
OE
LF DATA
CLK
LF STROBE
LF RESET
P22-12
P22-11
P22-13
P22-10
AUX IN MUTE
ML/AUX OUT MUTE
POWER LINK MUTE
HEADPHONES MUTE
ML LF OUT ON/OFF
MM LF IN ON/OFF
SPEAKER ON

Block diagram for Data




37
LID CONTROL
37PE1
37PE2
35IC9
P54-4
P54-6
GEAR
NO GEAR
22
CLAMPER POSITION
22PE1
22PE2
22PE3
22IC1
CLAMP POS 1
CLAMP POS 2
CLAMP POS 3
P50-9
P50-8
P50-10
30/31
TACHO CLAMPER
31PE1
31PE3
31PE2
22IC2
CTRL TTM
35IC11 35IC3
QUAD 1 TTM
INT TTM
QUAD 2 TTM
P50-6
P50-7
P50-11
ROUND REF 35IC4
L ROUND REF
SLEDGE
35IC3
INT SLEDGE
9
SLEDGE POSITION
9PE1
35IC9/11
P52-2
P52-3
QUAD 1 SLEDGE
QUAD 2 SLEDGE
27/28
28TR1
SAFETY FINGERGUARD
27D1
P55-4
P55-6
SAFETY RX
SAFETY TX
35TR27-35TR31
35TR32-35TR34
CTRL PULSE
35IC2
MOTOR CONTROL PROCESSOR
41 CD
35IC4
P-BIT
SFSY
41IC16
P-BIT DETECTOR
P50-14
P50-15
DISC DETECT
P50-20
41TR2/3/PE1/ DISC IC6 DETECTOR
P50-18
TTM IN
P50-16
TTM
P50-17
TTM DIR
41IC1
TURN TABLE CONTROL
TURN TABLE MOTOR
35IC8
DAC
33 CS
31 CLK
32 DATA
LID HOLD/OPEN
LID HOLD/CLOSED
LID MOTOR
35IC12
35D9
35D8
CLAMPER HOLD/UP
CLAMPER HOLD/DOWN
CLAMPER MOTOR
35IC13
35D6
35D5
CLAMPER LIMITER
35TR43
25-30V
35TR8,35TR16 CLAMPER/LID ON
ADJUST IN OUT 35IC7
POWER SUPPLY FOR CLAMPER- AND LIDMOTOR
CLAMPER/LID ON
SLEDGE HOLD I/ →CDI
SLEDGE HOLD/ →CD6
35IC10
DRIVER 35TR3 35TR15 35TR19 35TR20
DRIVER 35TR2 35TR14 35TR18 35TR21
SLEDGE MOTOR
35D2
35D3
SLEDGE BREAK 35TR47,48
SLEDGE BREAK
SAT SENSE
35IC10 35TR25
CURRENT SENSE
35IC10,2 35TR26
REF POSITION
26 IC1 ENDSTOP DETECTOR
X = DIAGRAM

Block diagram for Power Supply

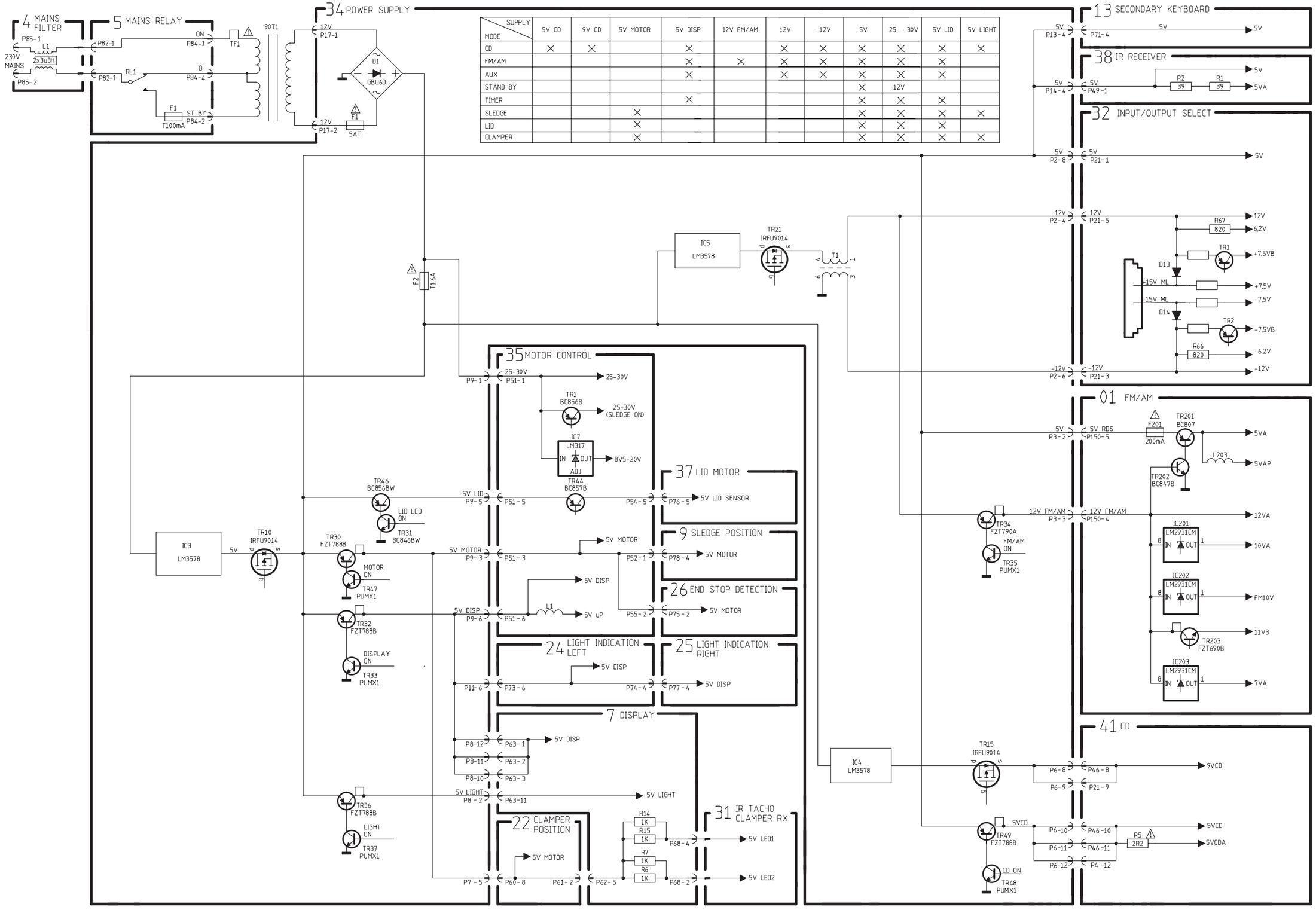


DIAGRAM A – Frontend tuner **PCB drawing for PCB1 see page 2.15**

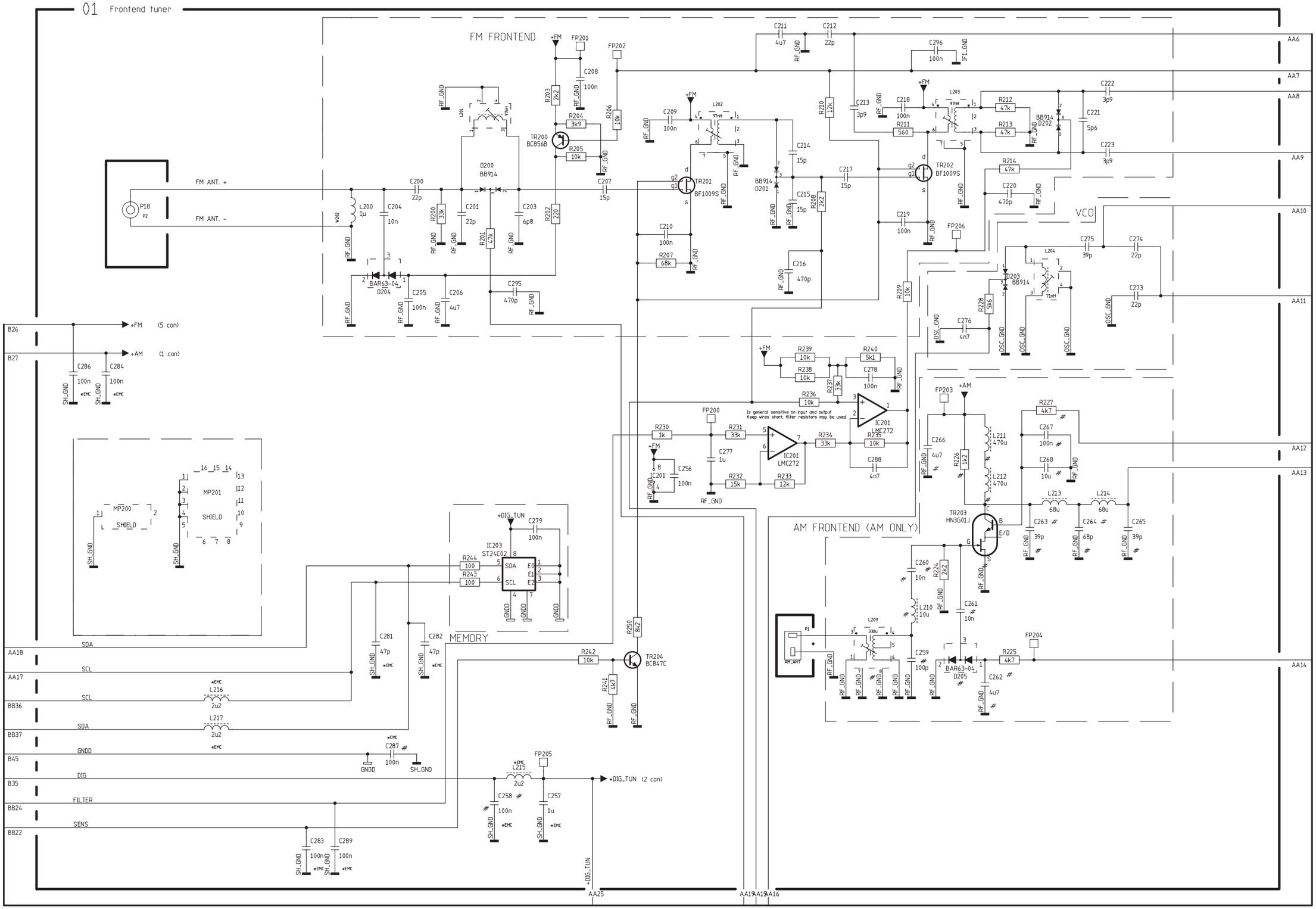
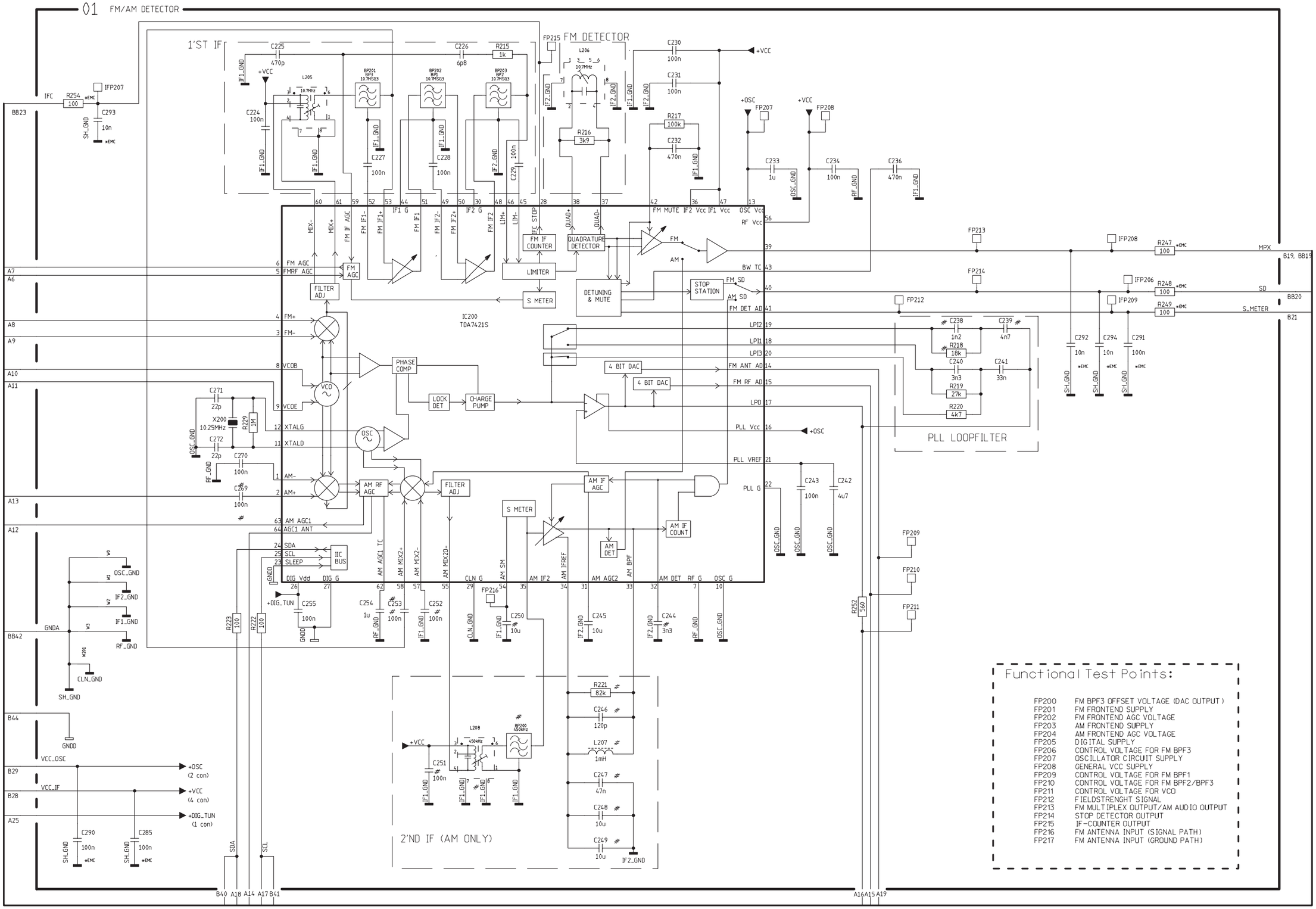


DIAGRAM AA – FM/AM detector **PCB drawing for PCB1 see page 2.15**



01 Stereo decoder and power section

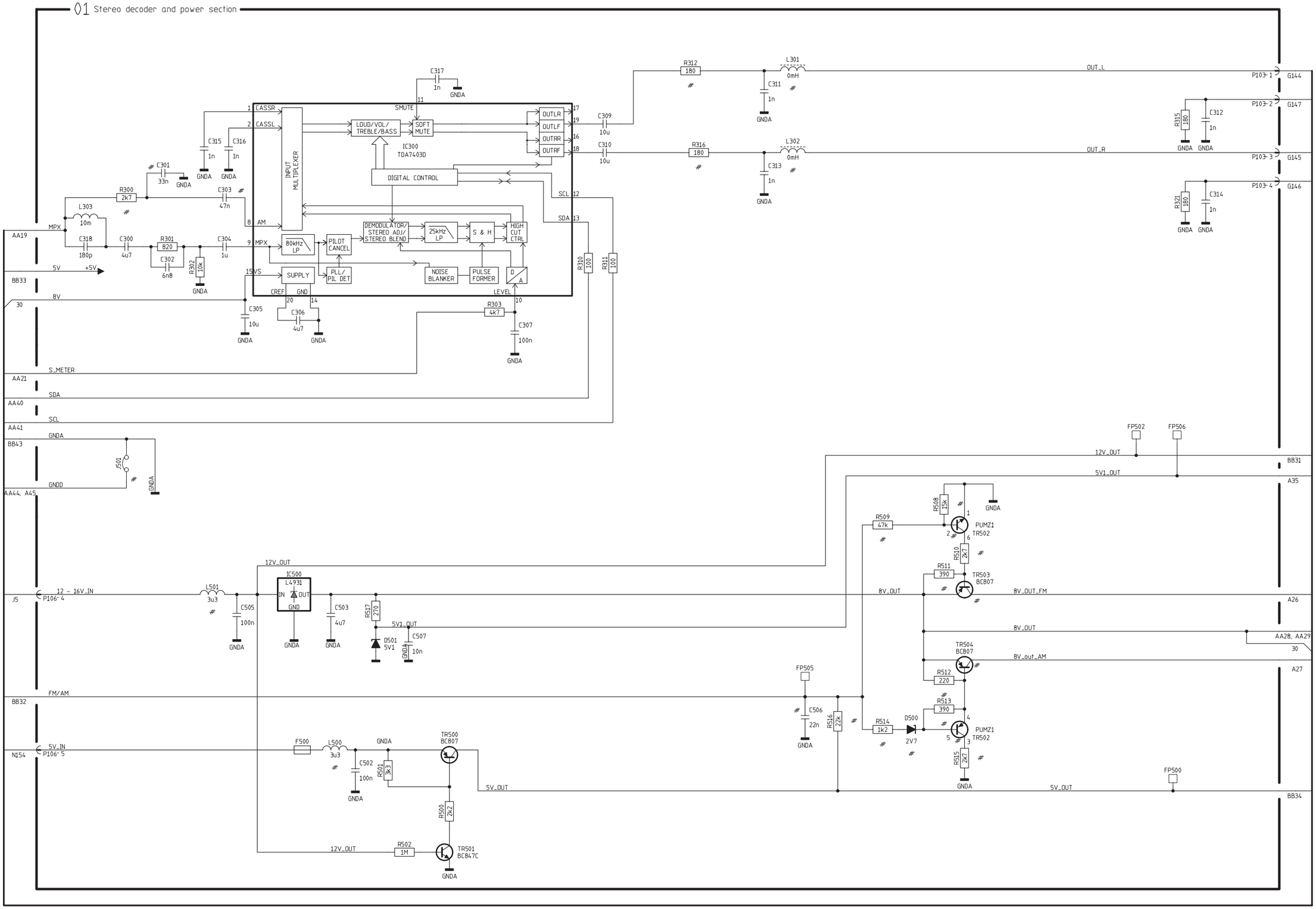
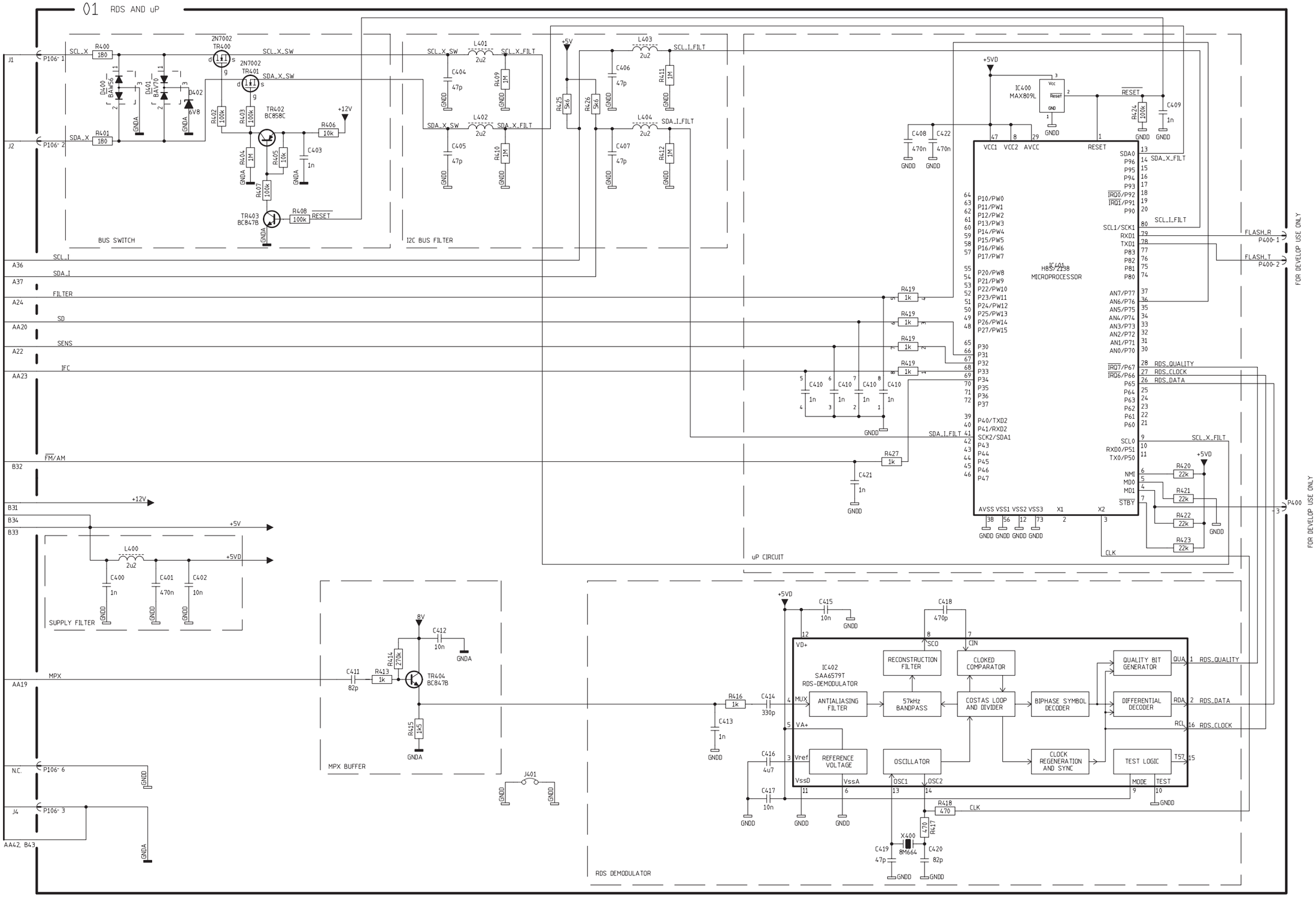
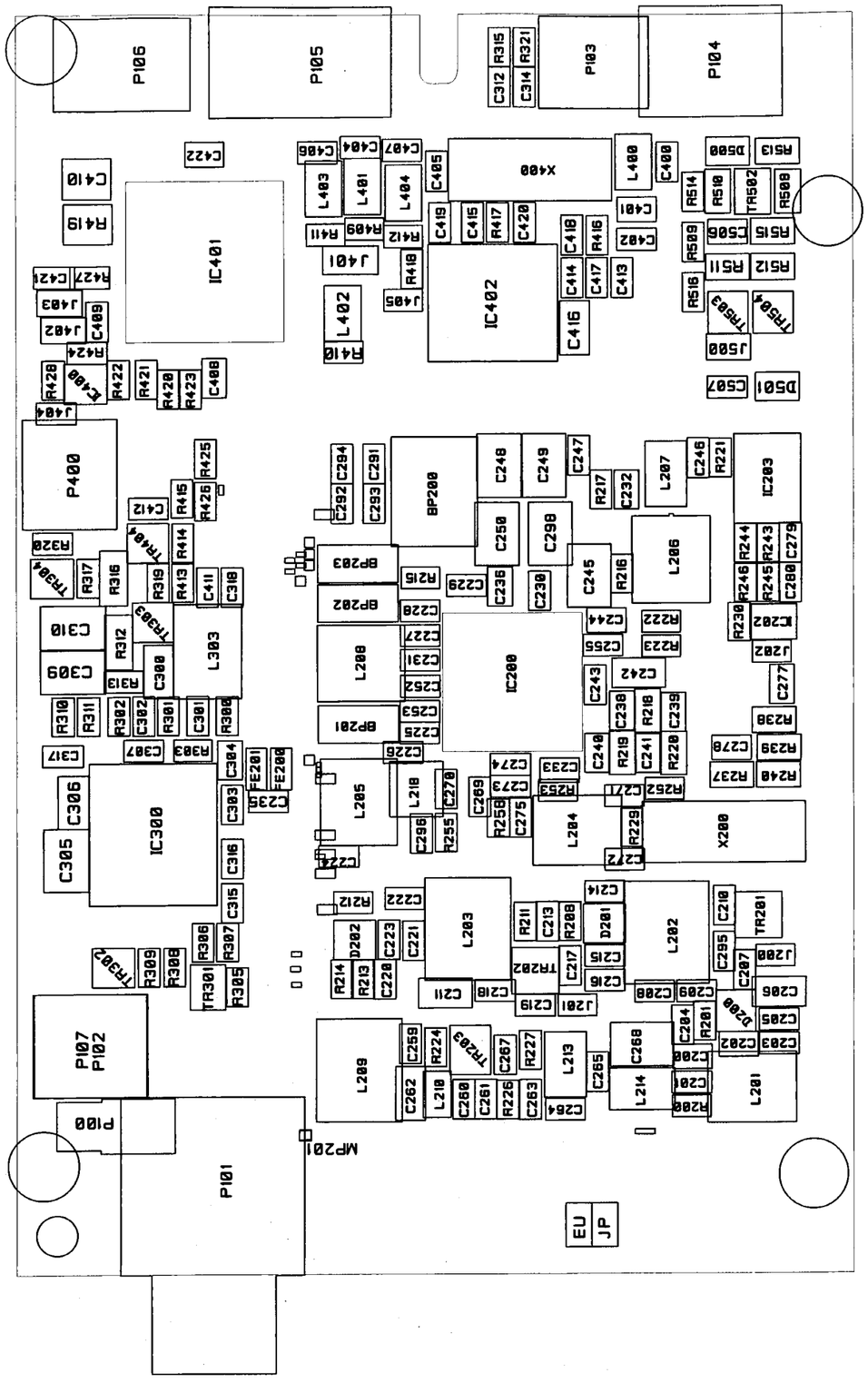


DIAGRAM BB – RDS and µP **PCB drawing for PCB1 see page 2.15**





PCB1, FM/AM - RDS – secondary side

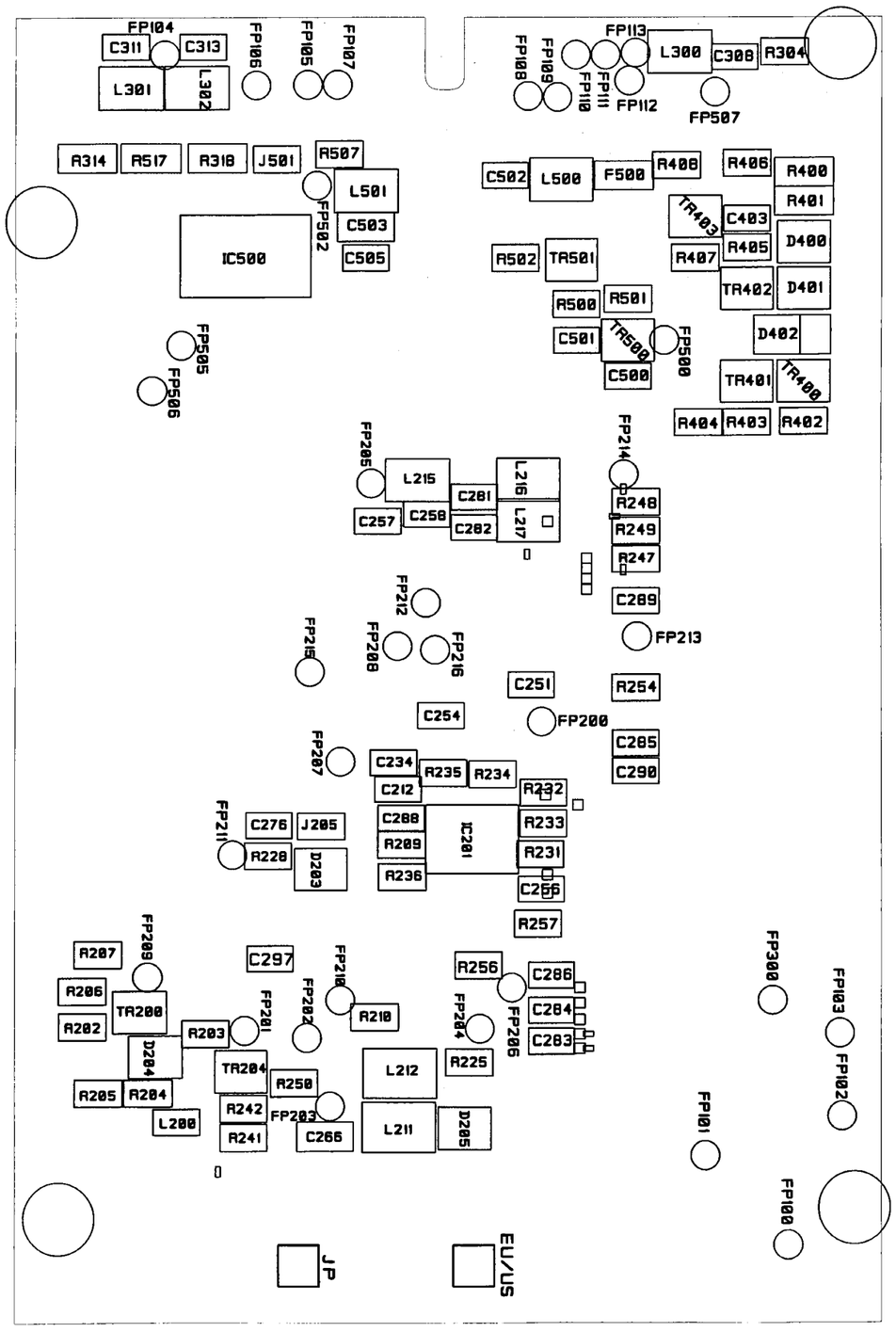
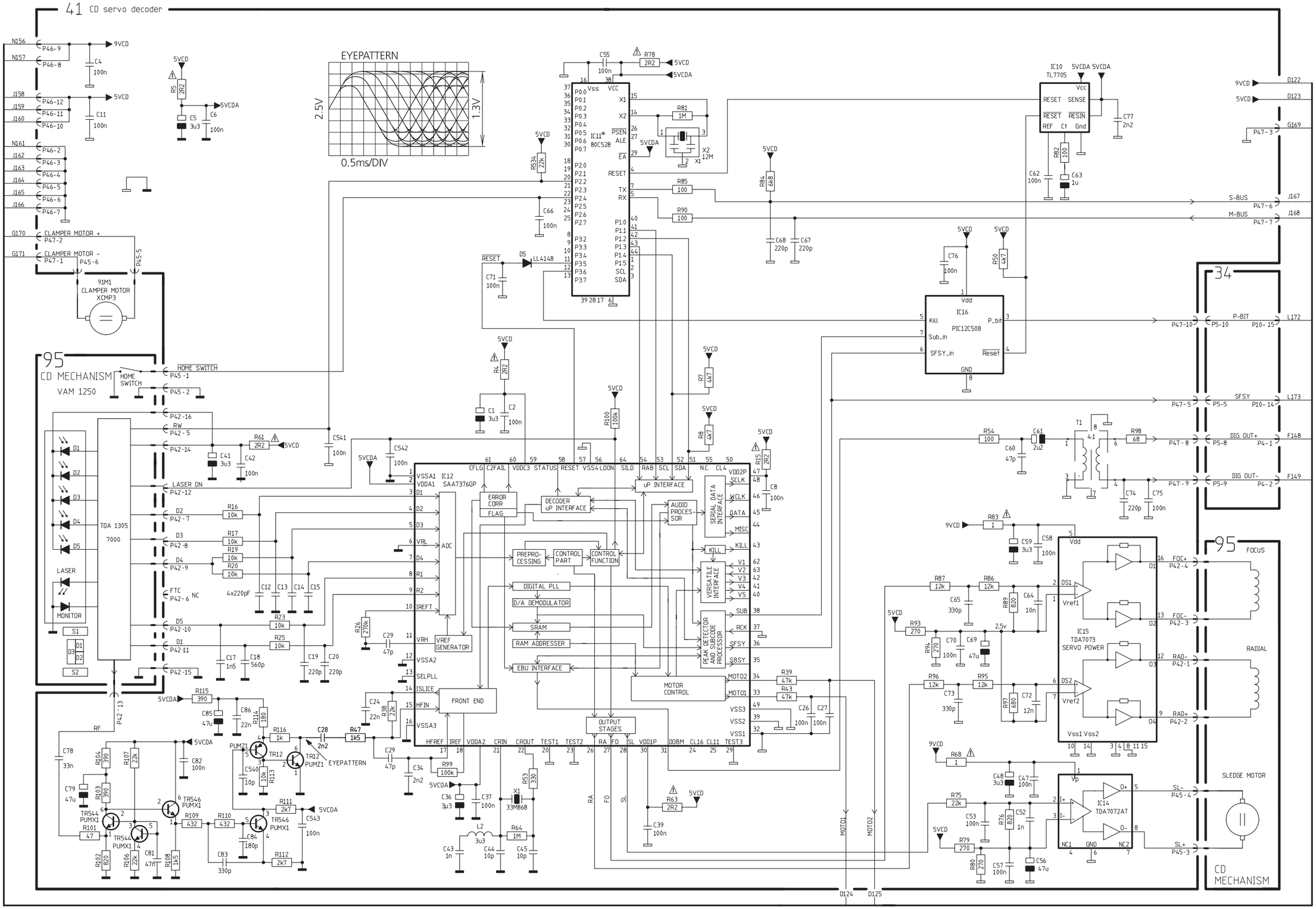
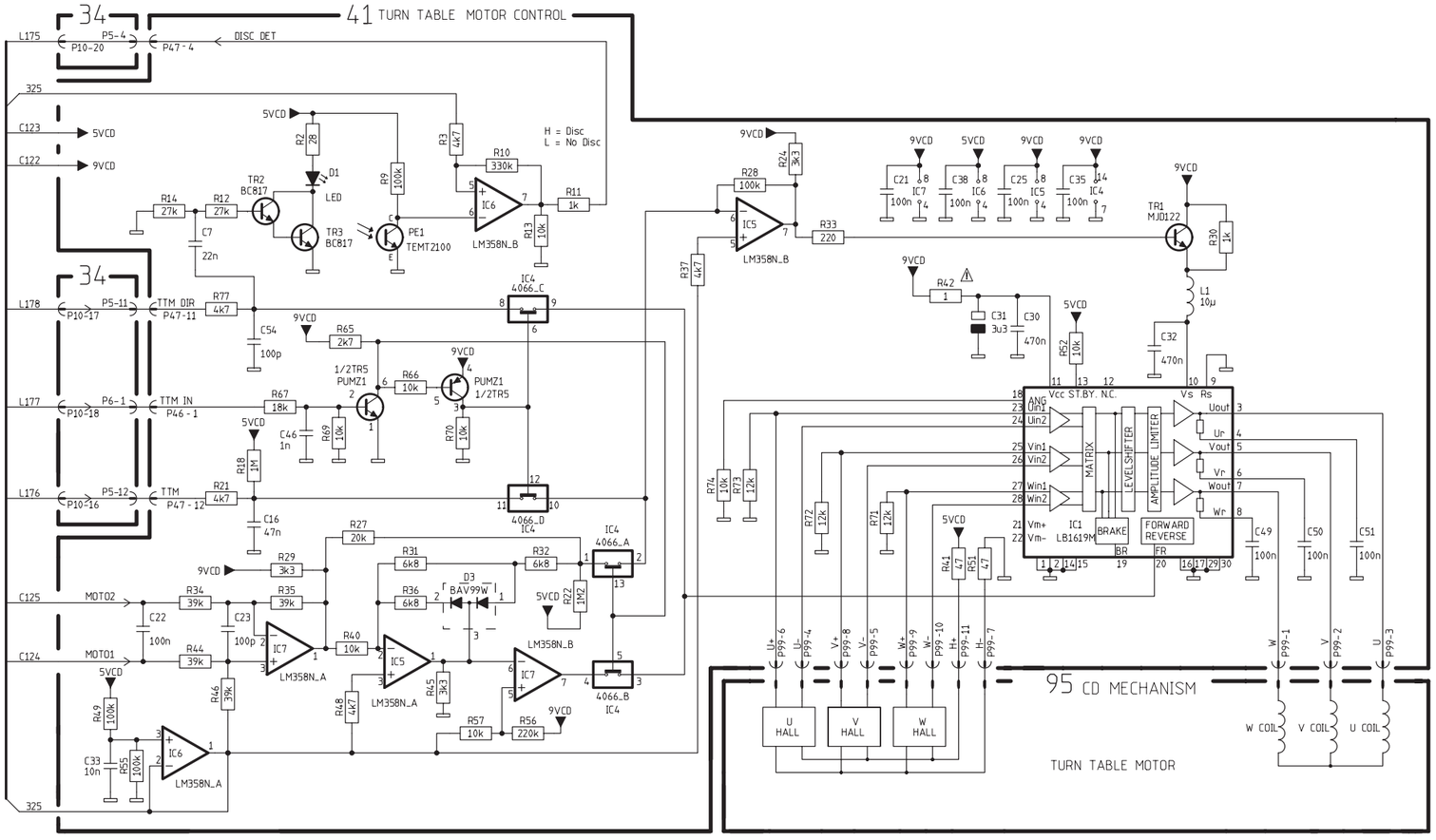
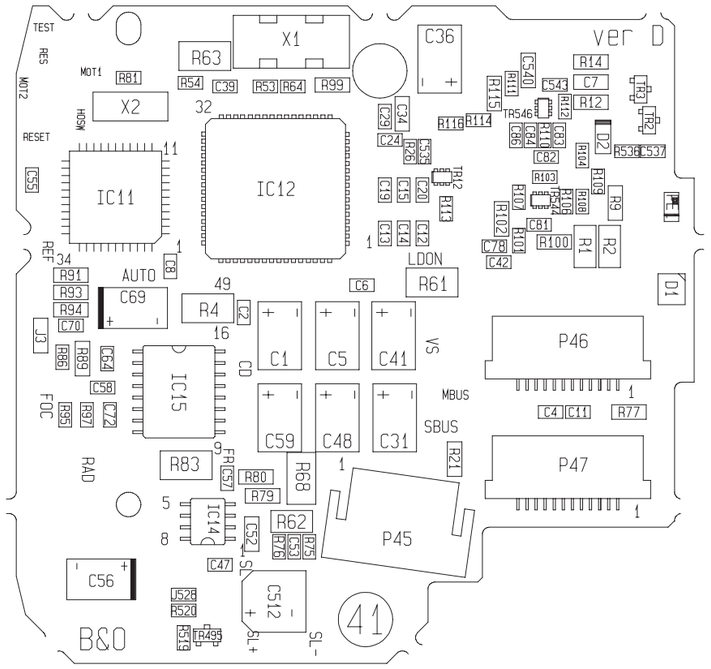


DIAGRAM C – CD servo decoder **PCB drawing for PCB41 see page 2.17**





PCB41, CD – primary side



PCB41, CD – secondary side

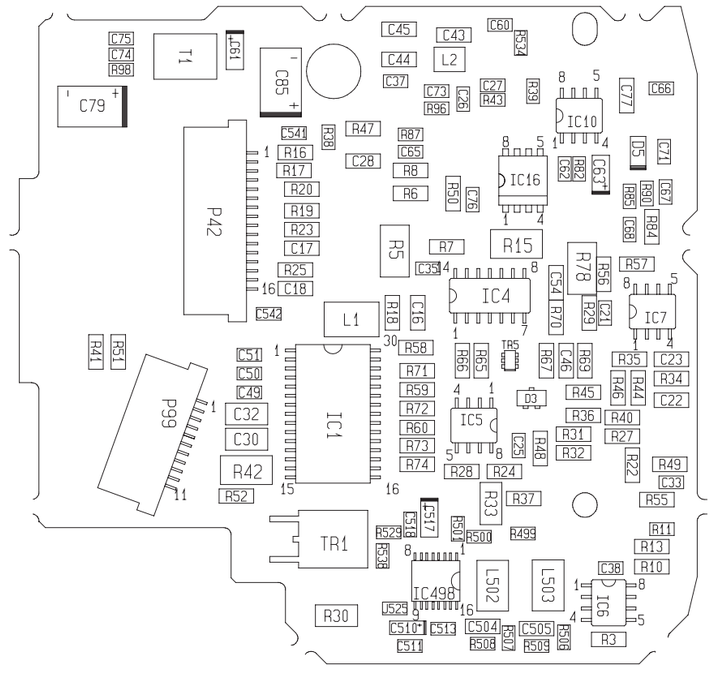
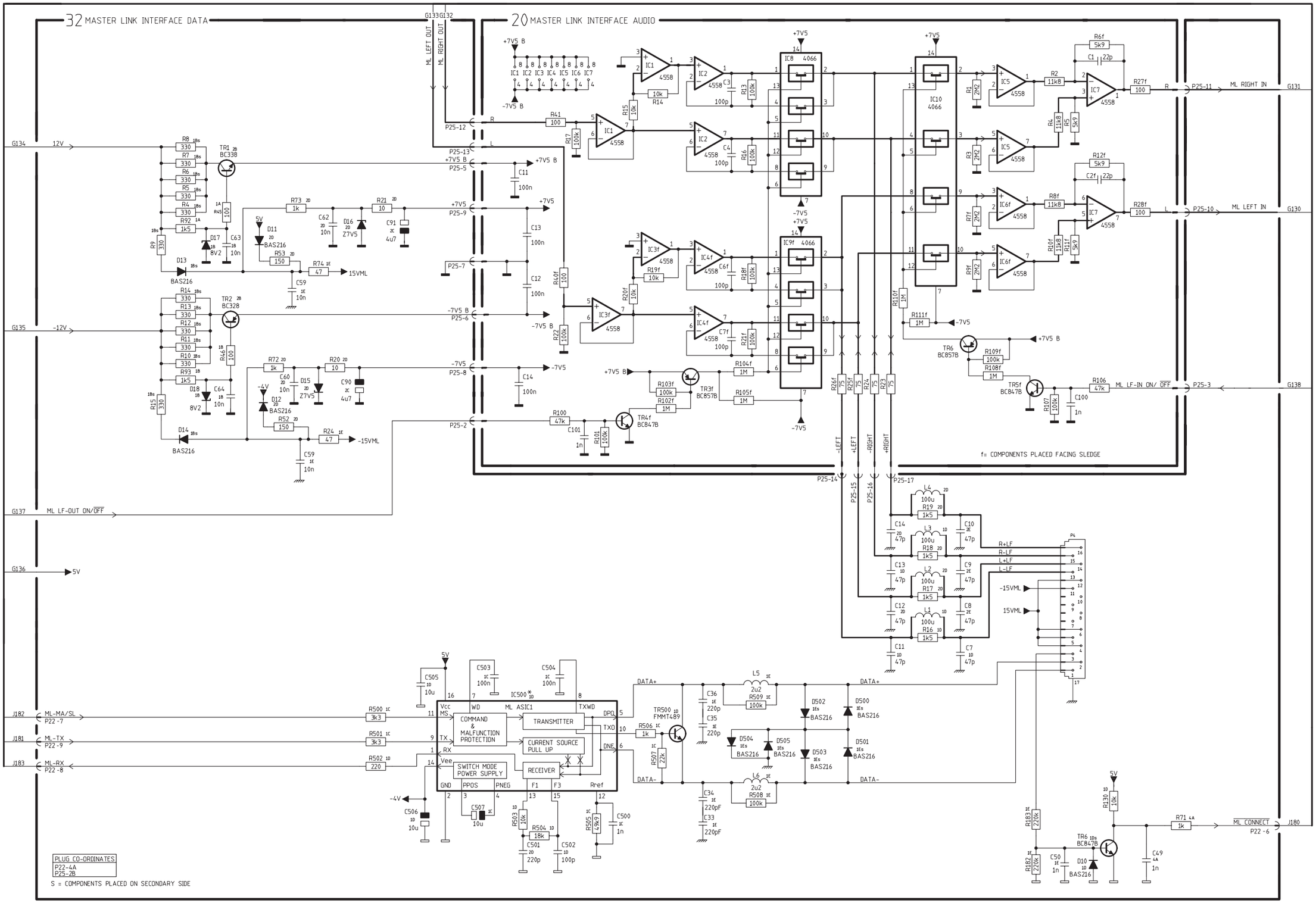


DIAGRAM E – Master Link interface data/audio **PCB drawing for PCB32 see page 2.21**



32 DIGITAL/ANALOG DECODER

From version:0

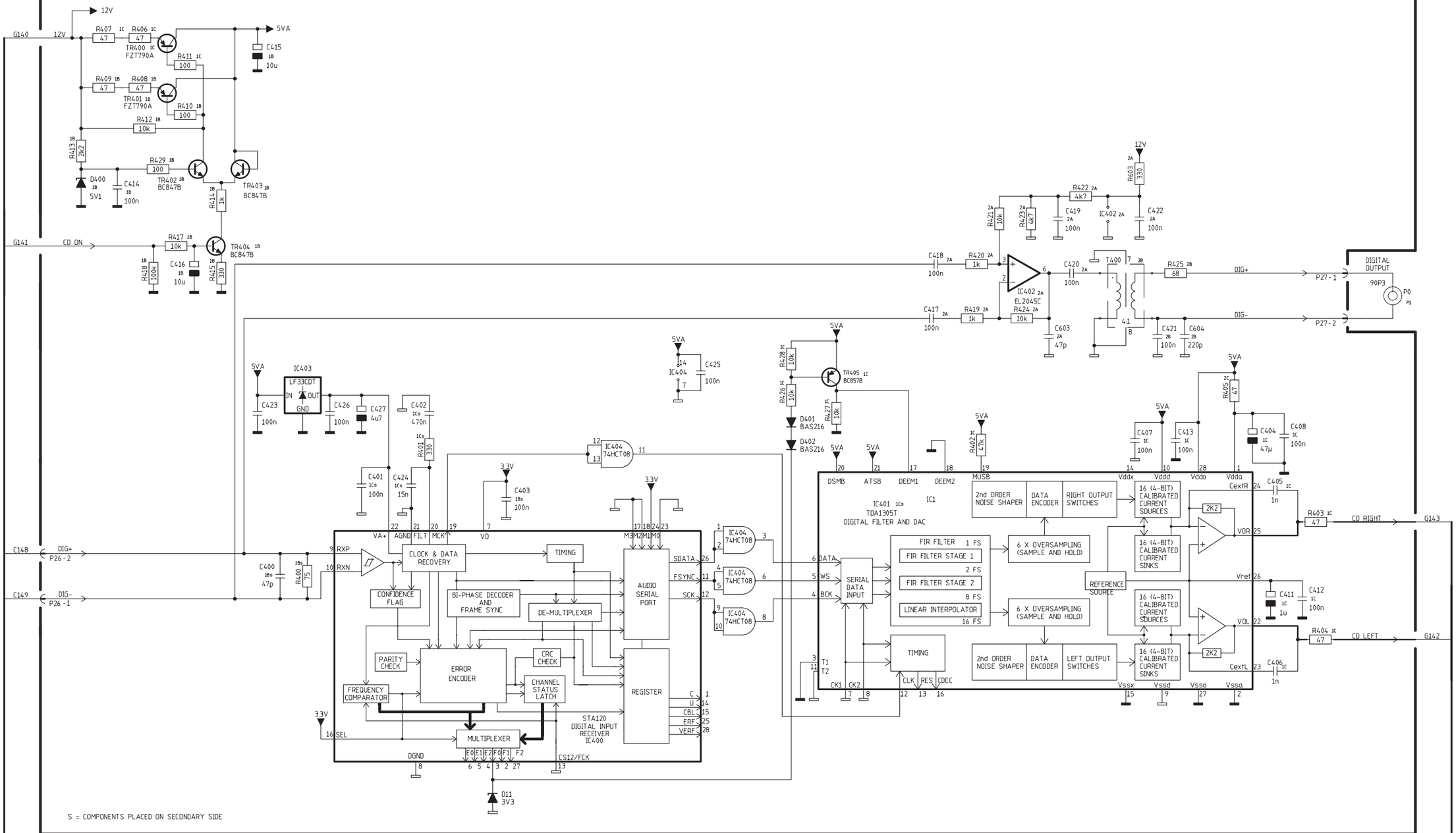
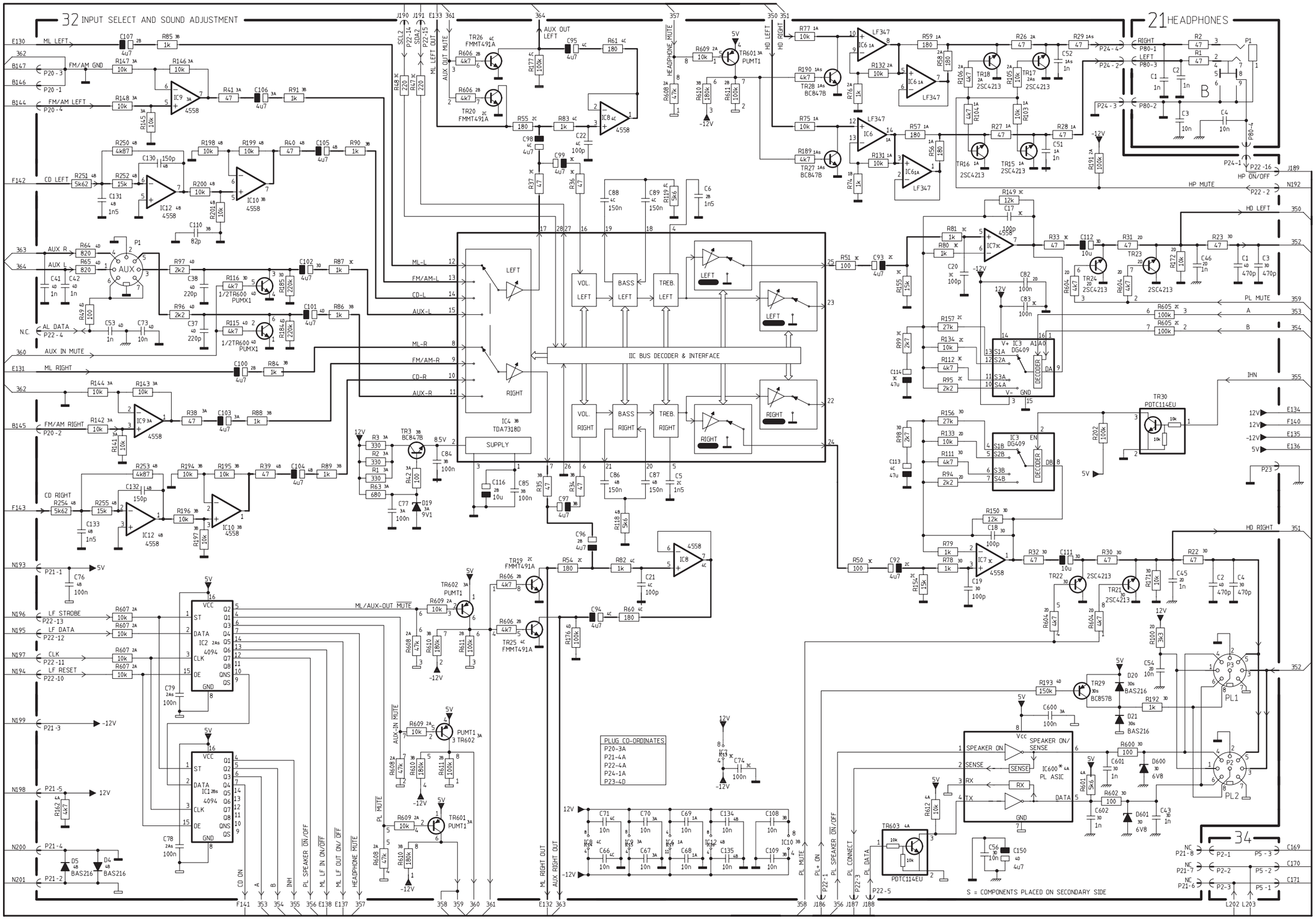
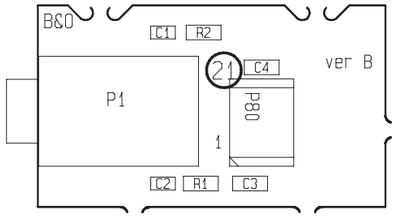


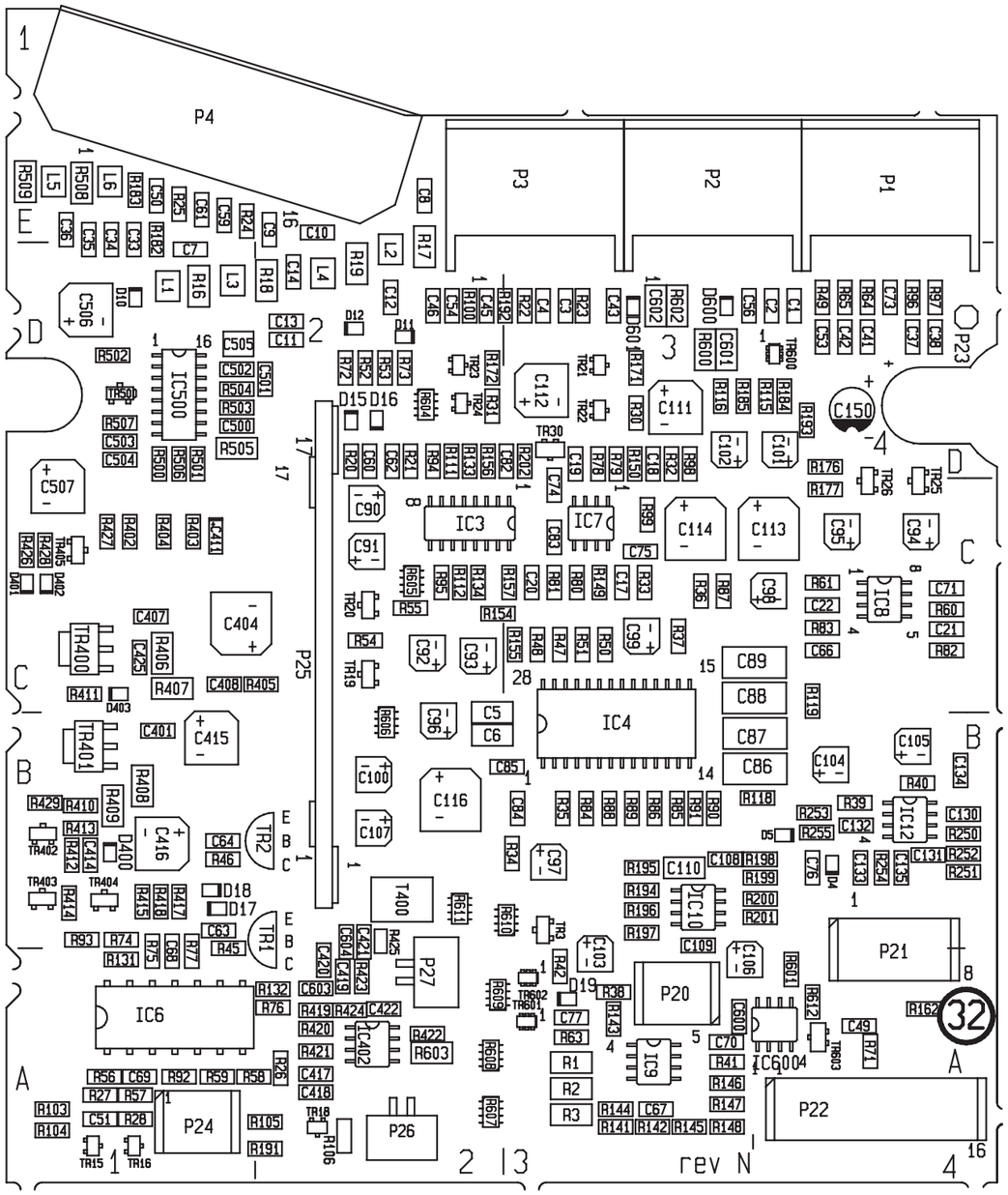
DIAGRAM G – Input select and Sound adjustment **PCB drawing for PCB21 and PCB32 see page 2.21**



PCB21, Headphone



PCB32, Input/output Select, Sound Adjustment – preliminary side



PCB32, Input/output Select, Sound Adjustment – secondary side

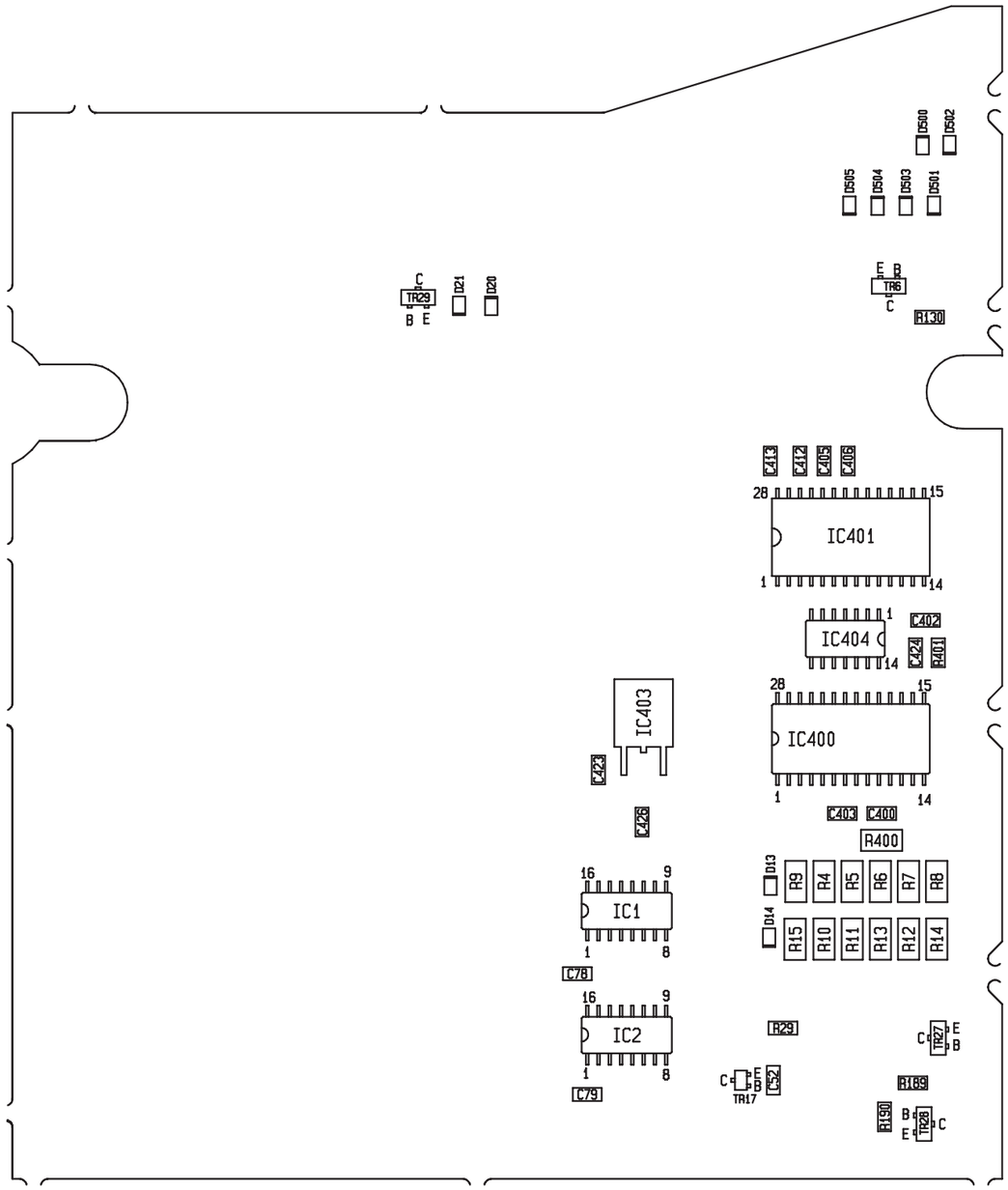
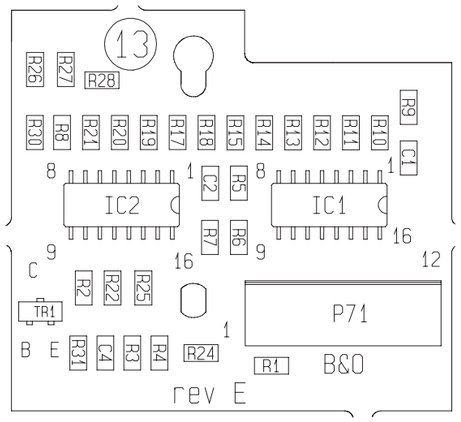
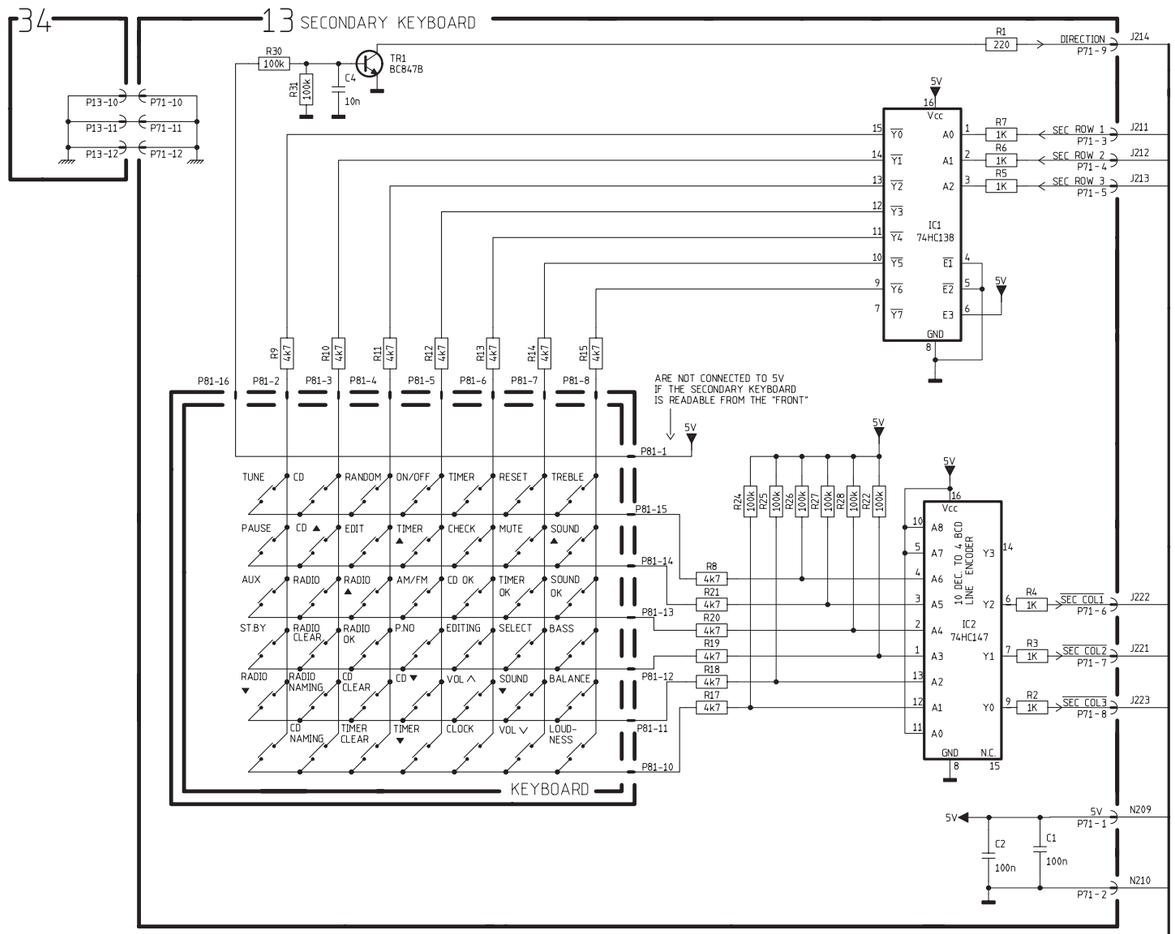


DIAGRAM H – Keyboard and IR Receiver

PCB13, Secondary Keyboard



PCB drawing for PCB14 see page 2.30



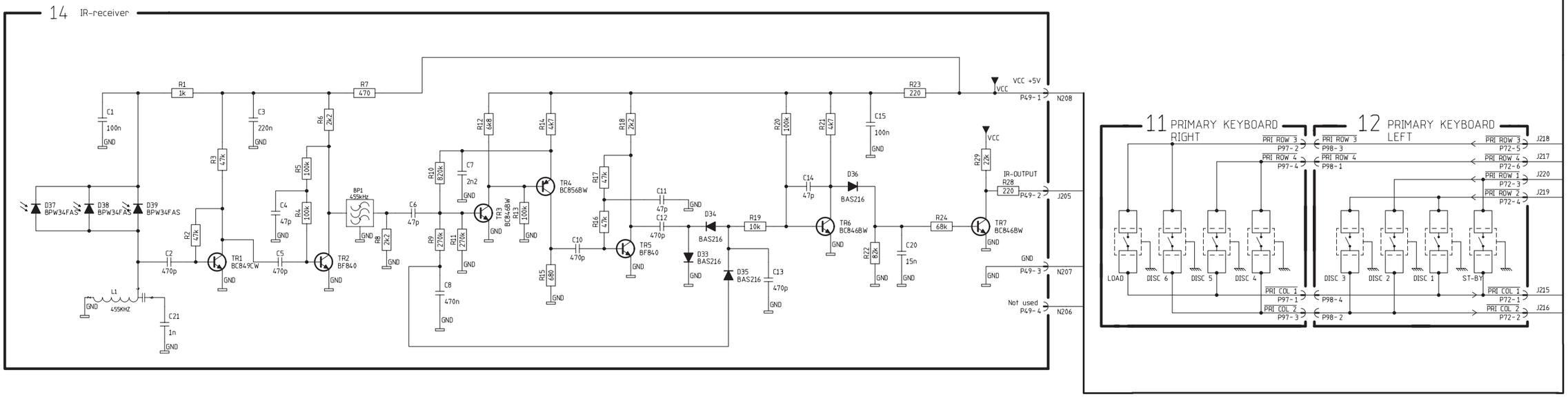
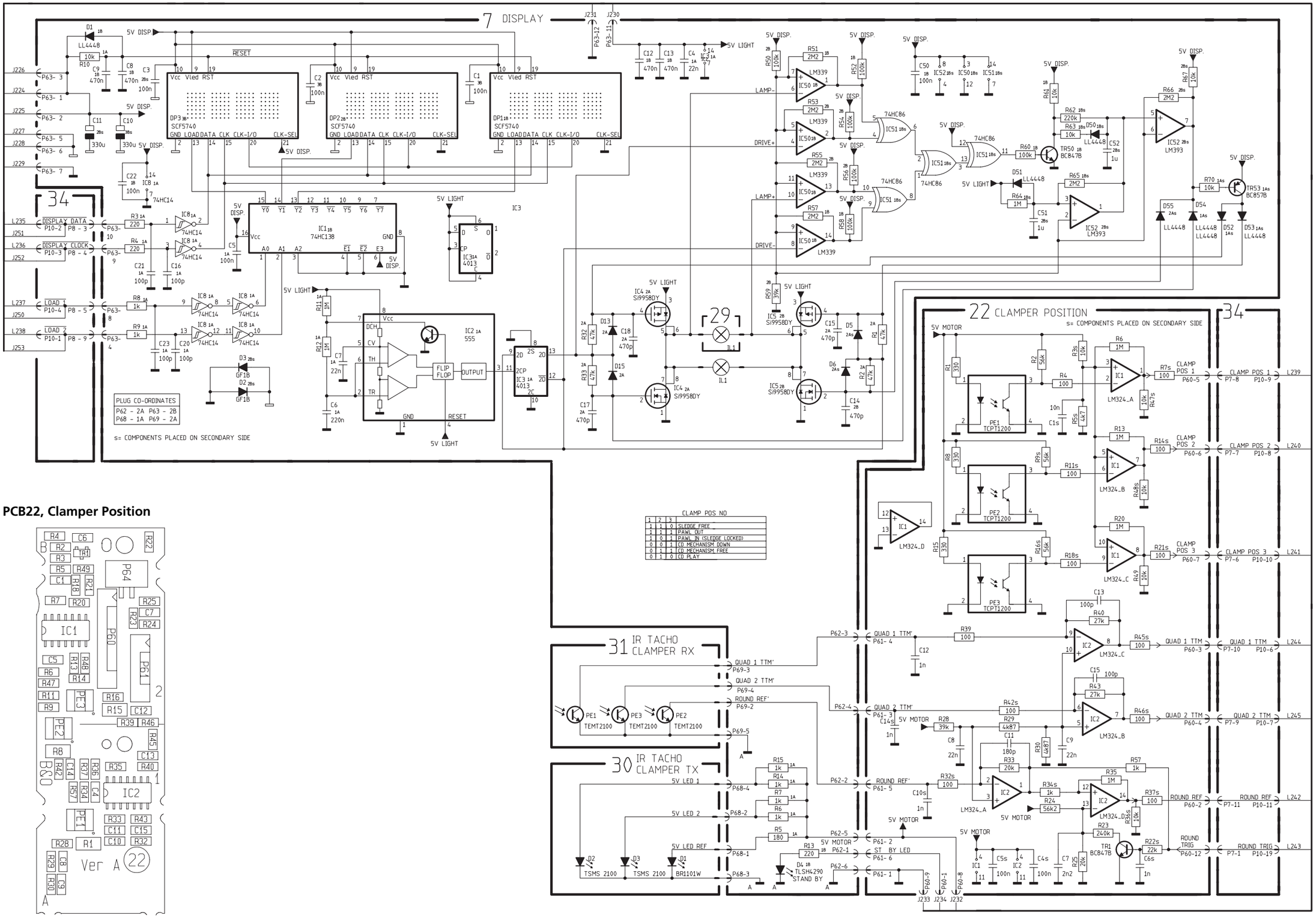
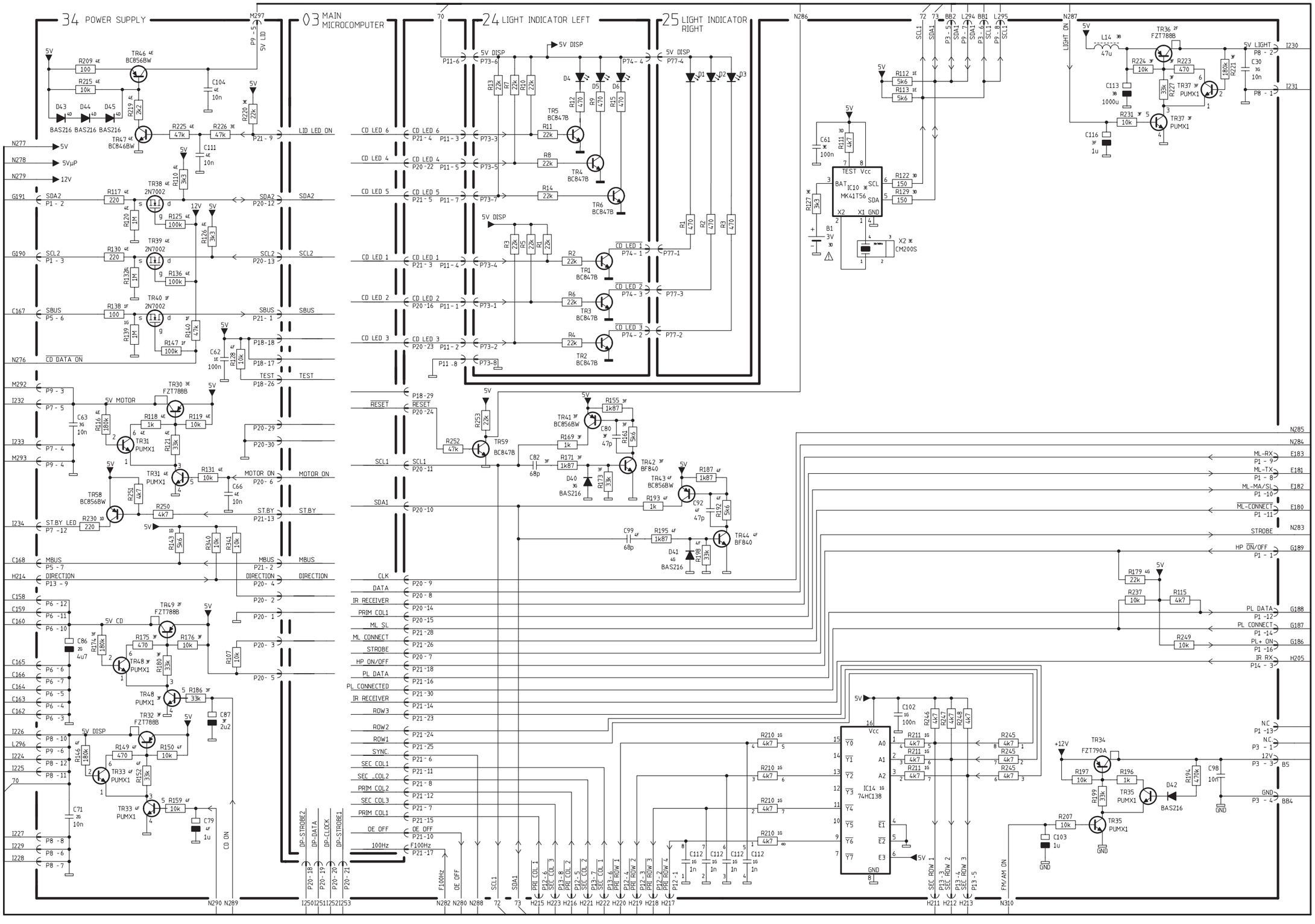


DIAGRAM I – Display and clamper position **PCB drawing for PCB7 see page 2.31**



PCB22, Clamper Position

DIAGRAM J – Microcomputer, Power supply & Light Indicator **PCB drawing for PCB24 see page 2.30 – PCB34 see page 2.25**



PCB34, Power Supply

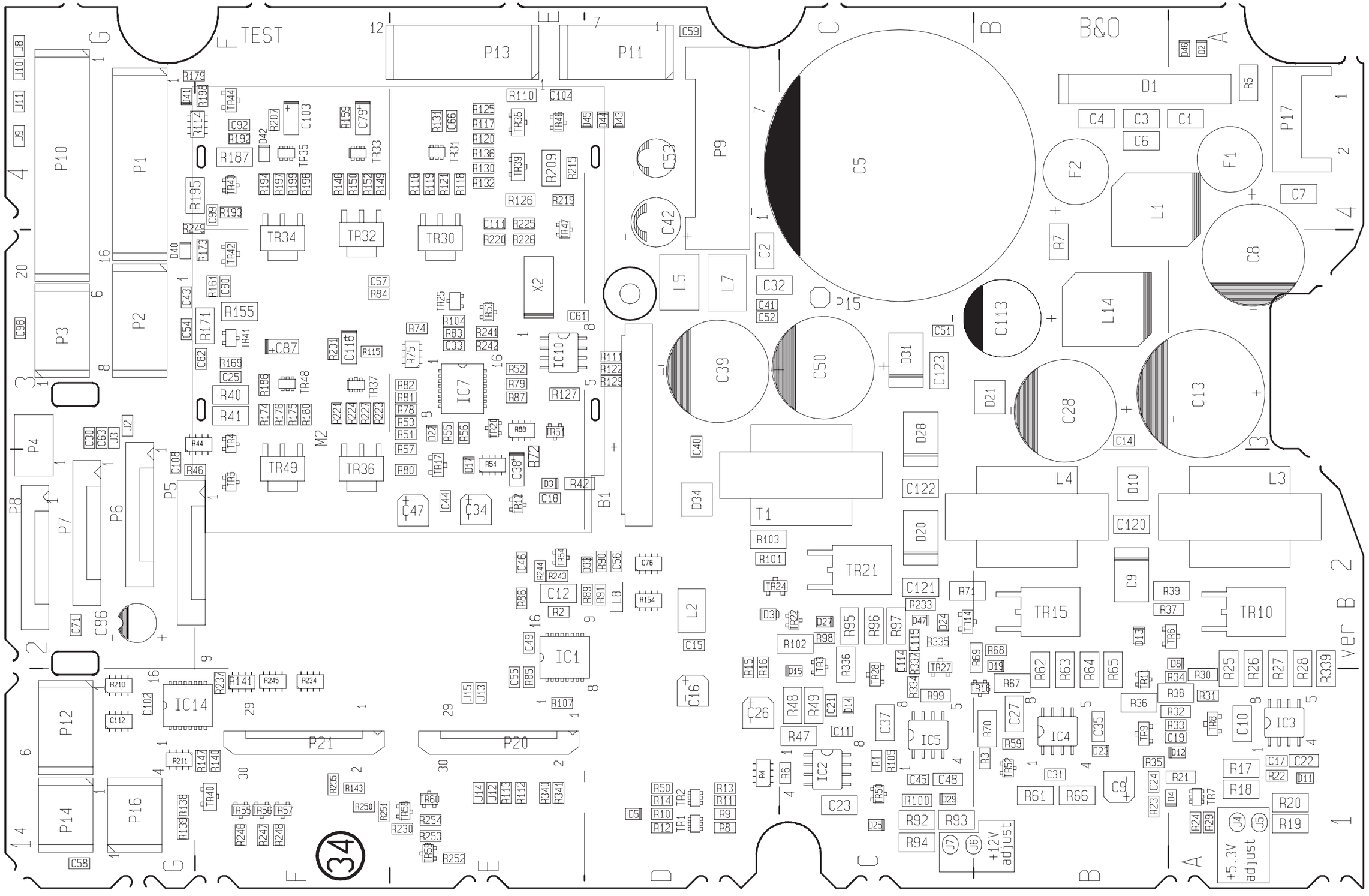
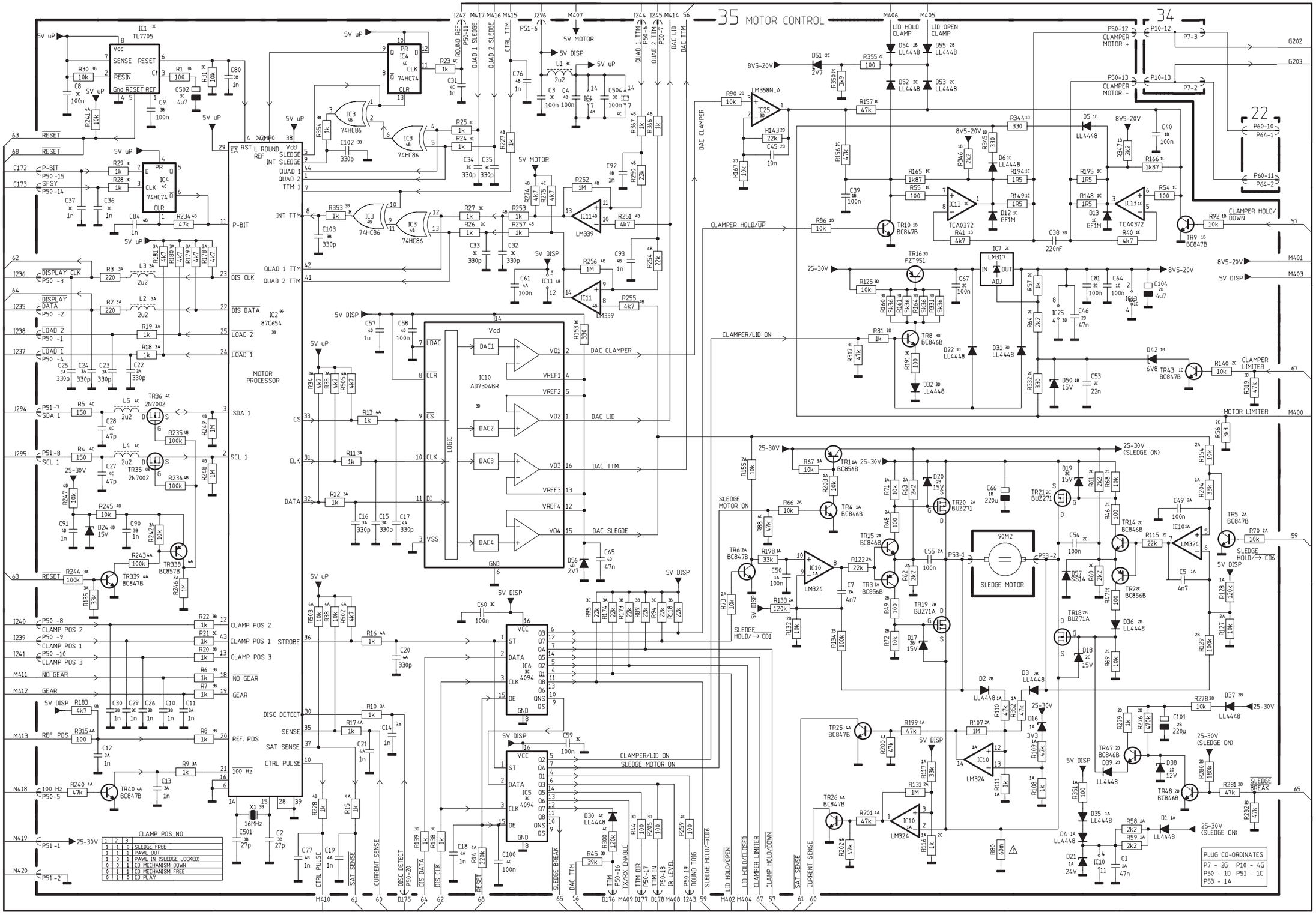
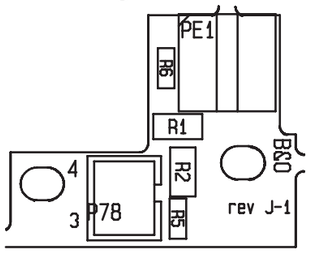


DIAGRAM L – Motor Control

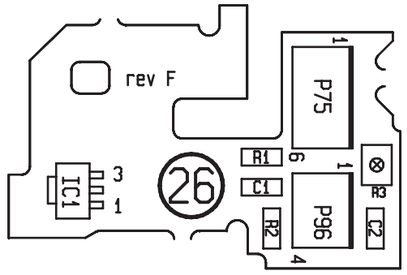


PCB35, Motor Control

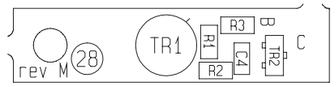
PCB9, Sledge Position



PCB26, End Stop Detector



PCB28, Safety RX



PCB37, Lid Motor

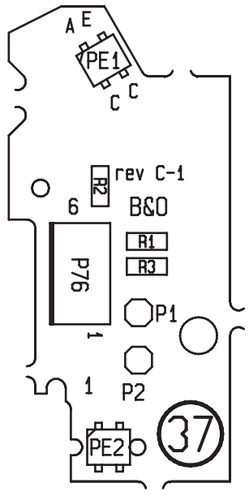


DIAGRAM M – Motor Control and Detection **PCB drawing for PCB35 see page 2.27**

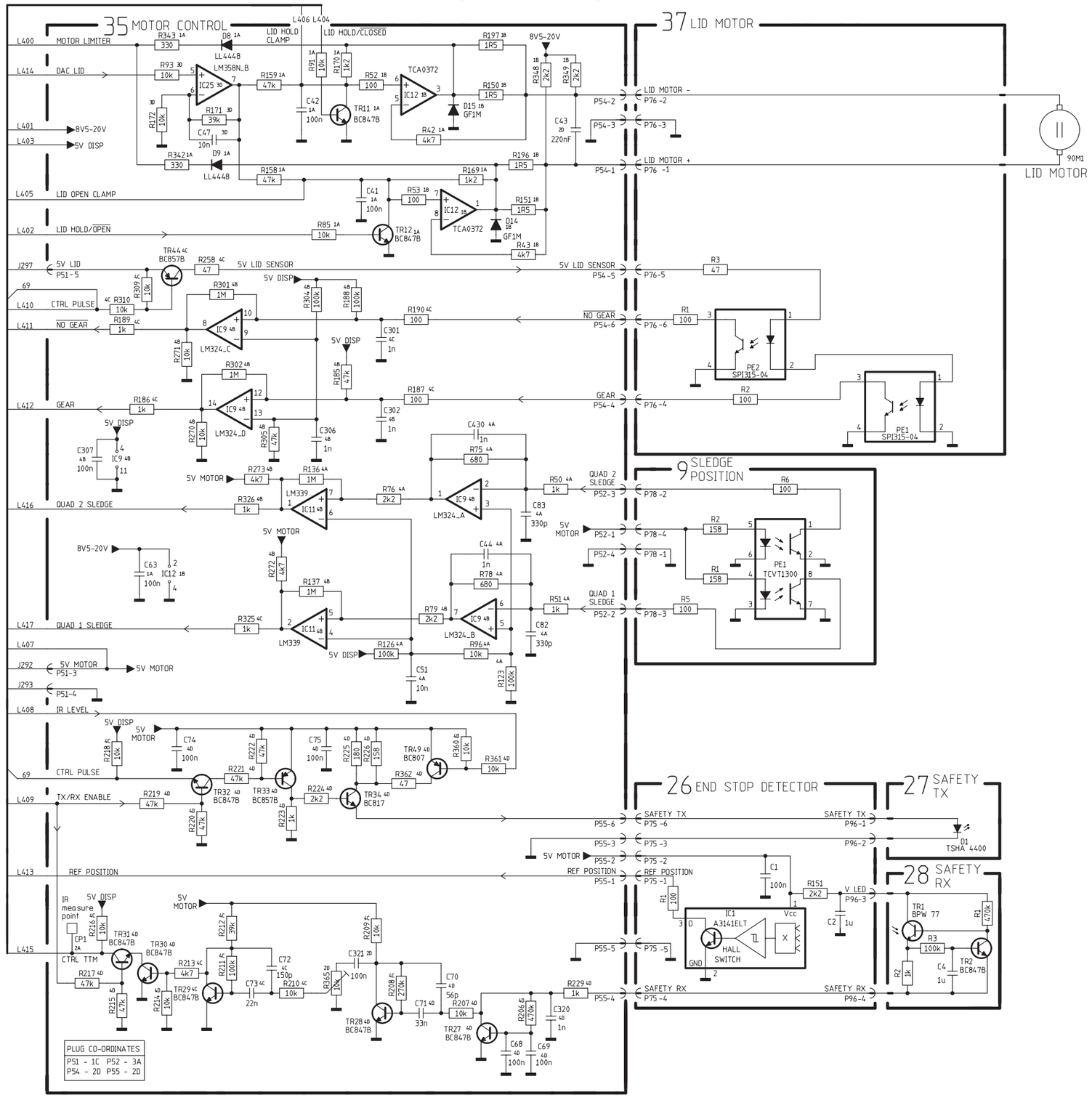
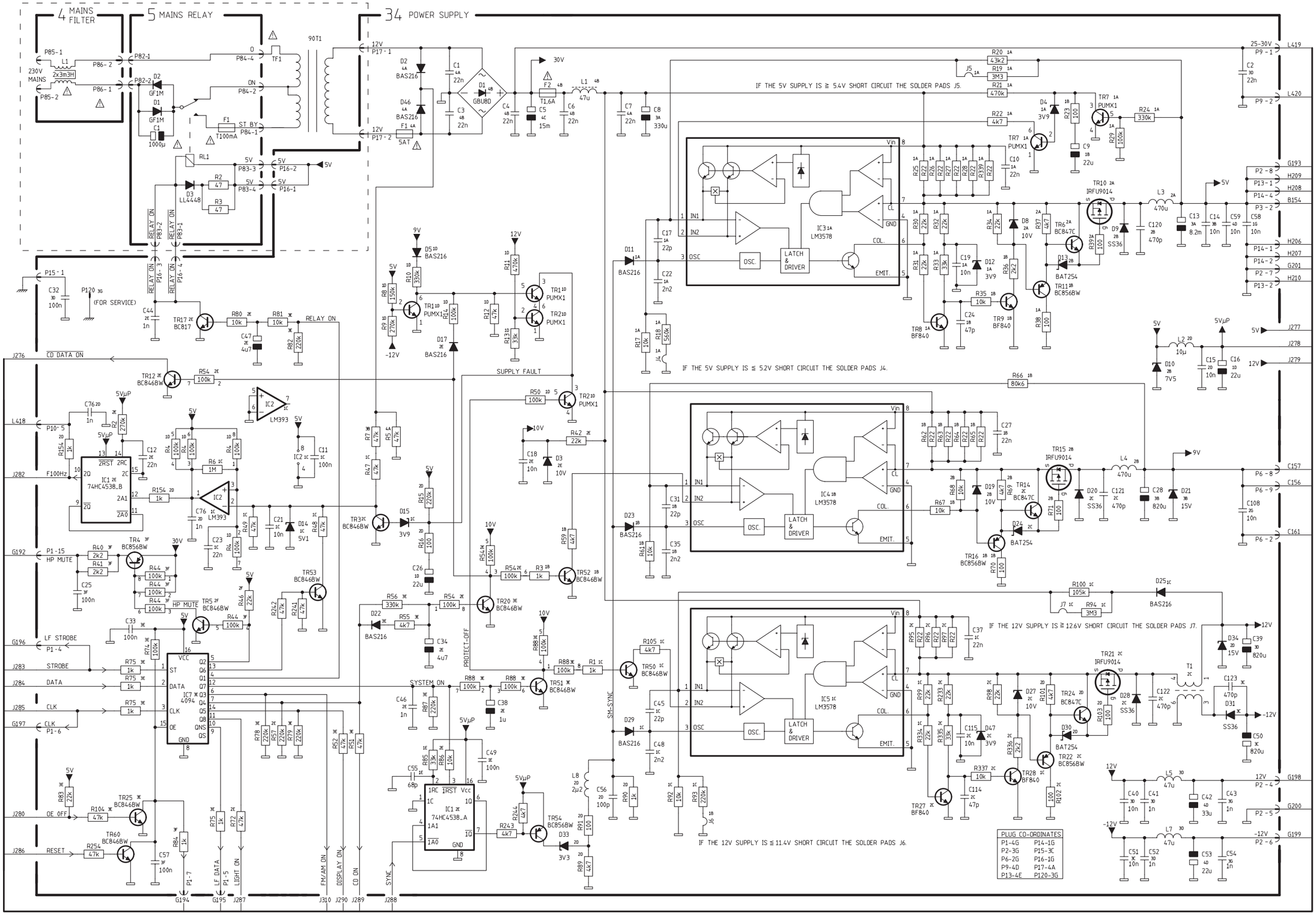
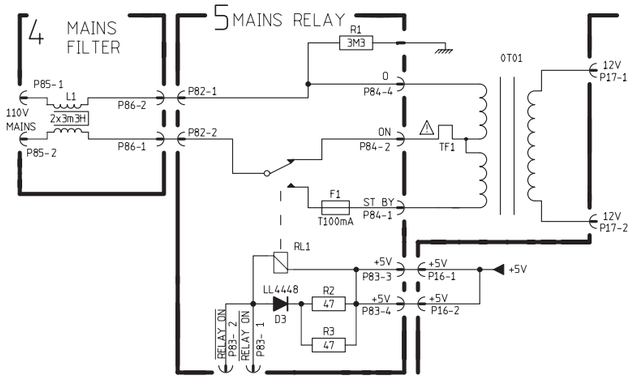


DIAGRAM N – Power Supply **PCB drawing for PCB4 see page 2.31 – PCB5 see page 2.30 – PCB34 see page 2.25**

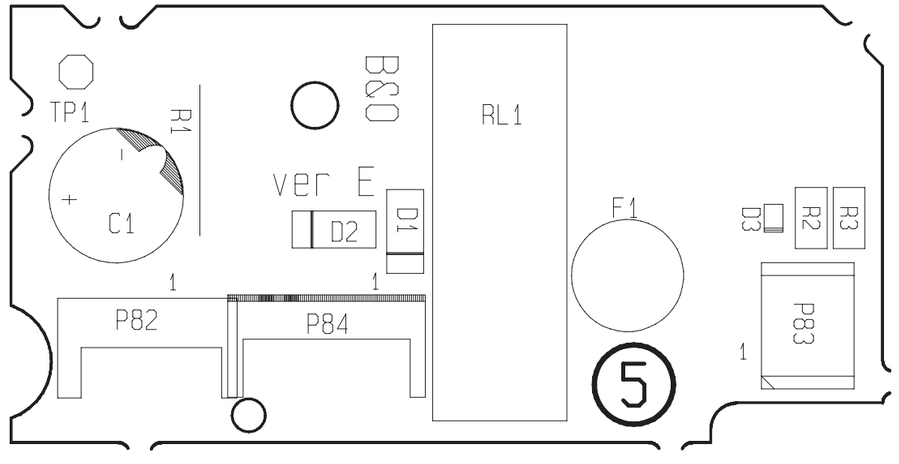


2.30 PCB drawings

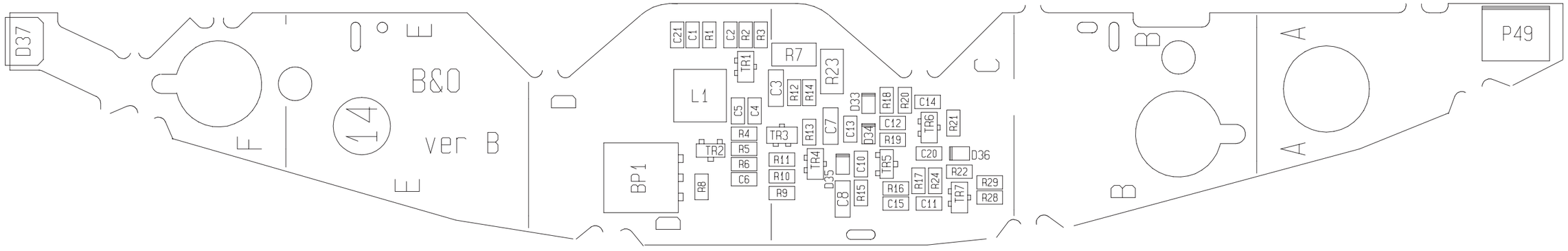
DIAGRAM O – Mains relay USA



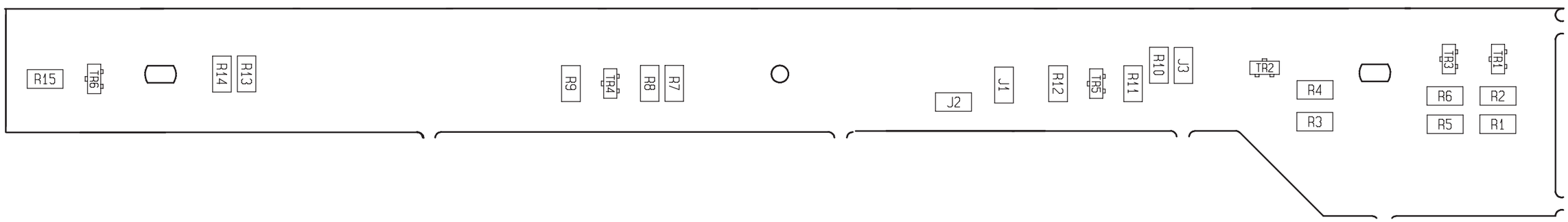
PCB5, Mains Relay



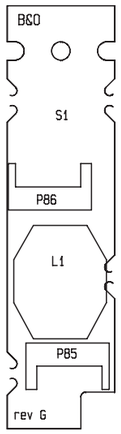
PCB14, IR Receiver



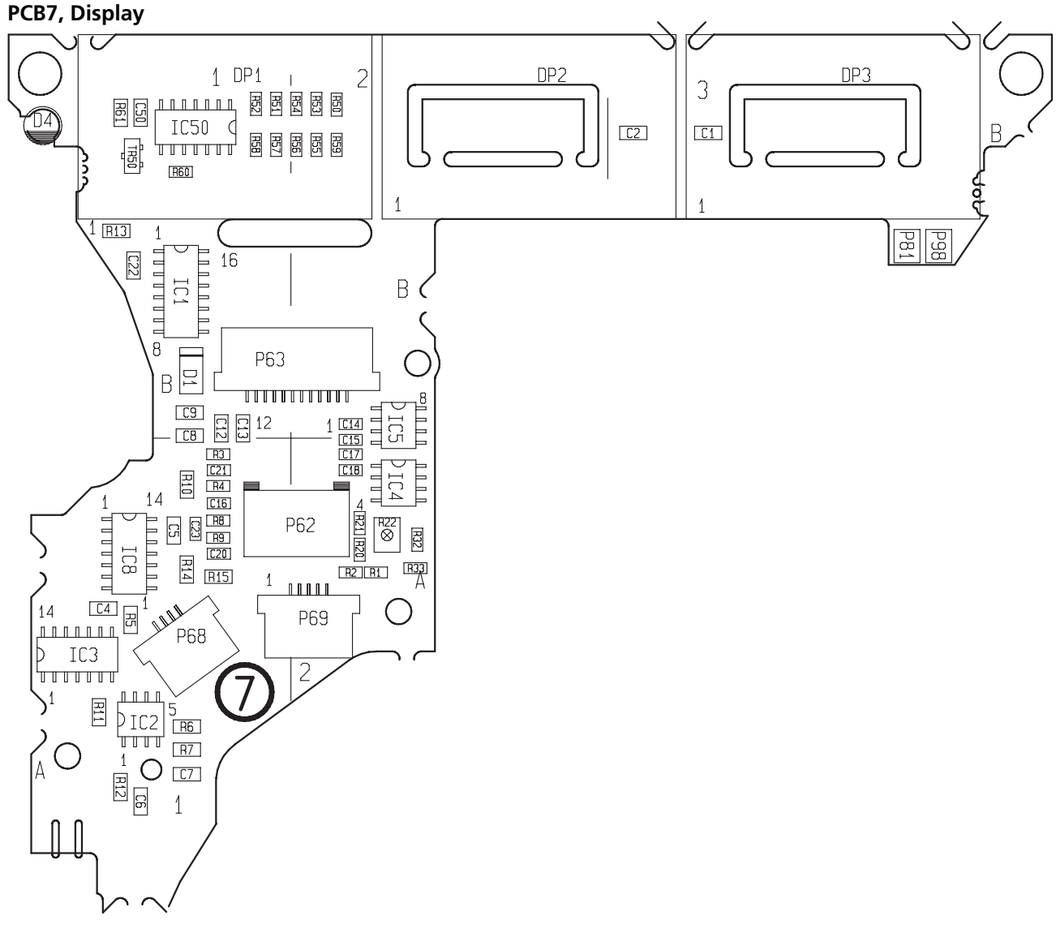
PCB24, Light indication, left

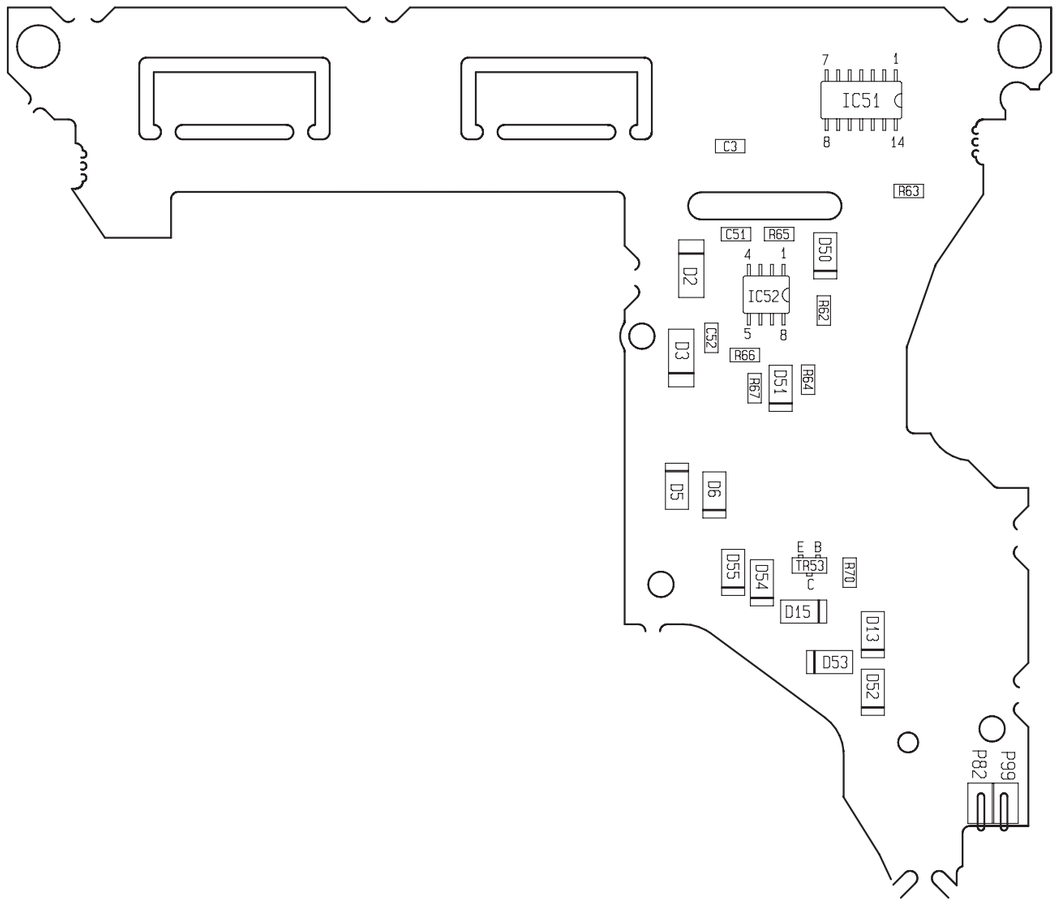


PCB4, Mains Filter



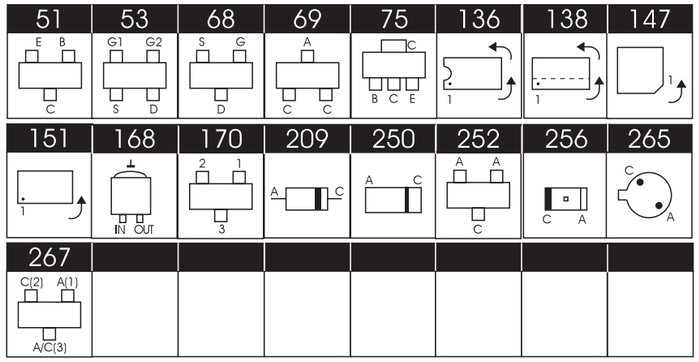
PCB7, Display





3.1 List of electrical parts

List of electrical parts



Resistors not referred to are standard, see page 3.13 and 3.14

PCB1, 8000462 FM/AM - RDS
Type 2571, 2572, 2573, 2575, 2576, 2577, 2580

IC200Δ	8344023	**147**	TDA7421N	IC401Δ	8344055	**147**	µPH8S2137
IC201Δ	8343950	**151**	TS912ID				f/SW 1.5
IC203Δ	8342519	**151**	M24C02	IC402Δ	8342568	**136**	SAA6579T
IC300Δ	8343681	**136**	TDA7403D	IC500Δ	8343733	**168**	L4931ABPT80
IC400Δ	8343809	**170**	MAX809				

TR200	8320753	**51**	BC856B	TR403-	8320755	**51**	BC847B
TR201-	8321276	**53**	BF1009S	TR404			
TR202				TR500	8320971	**51**	BC807-40
TR203	8321277	**75**	HN3G01J	TR501	8320936	**51**	BC847C
TR204	8320936	**51**	BC847C	TR502	8321196	**136**	PUMZ1
TR400-	8320856	**68**	2N7002-T1	TR503-	8320971	**51**	BC807-40
TR401				TR504			
TR402	8320778	**51**	BC857C				

D200-	8301140	**252**	BB914	D401	8300895	**252**	BAV70
D203				D402	8300520	**250**	BZX284-B6V8
D204-	8301143	**267**	BAR63-04	D500	8301056	**250**	BZX284-B2V7
D205				D501	8301064	**250**	Z5.1V BZX284
D400	8300894	**69**	BAW56				

R208	5013156	2.2KΩ 1/16W		R240	5012559	5.1KΩ 1/8W	
R209	5012331	10KΩ 1/8W		R312	5011300	180Ω 0.25W	
R226	5013152	1.2KΩ 50V		R316	5011300	180Ω 0.25W	
R231	5012238	33KΩ 1/8W		R400-	5011300	180Ω 0.25W	
R234	5012238	33KΩ 1/8W		R401			
R235-	5012331	10KΩ 1/8W		R419	5030051	1KΩ	
R236				R428	6000059	Jumper	
R237	5012238	33KΩ 1/8W		R517	5021532	270Ω 0.25W	
R238-	5012331	10KΩ 1/8W					
R239							

C200	4000404	22pF		C222-	4001118	3.9pF ±0.1pF 50V	
C201	4001127	22pF		C223			
C203	4001121	6.8pF ±0.1pF 50V		C224	4011135	100nF 25V	
C204	4011122	10nF 50V		C225	4001143	470pF 50V	
C205	4011134	100nF 16V		C226	4001126	18pF 50V	
C206	4010419	4.7µF 10V		C227-	4011134	100nF 16V	
C207	4001125	15pF 50V		C231			
C208	4011134	100nF 16V		C232	4010387	470nF 16V	
C209-	4011135	100nF 25V		C233	4010323	1µF 16V	
C210				C234	4010274	100nF 25V	
C211	4010434	4.7µF 16V		C235	4011110	1nF 50V	
C212	4000404	22pF 50V		C236	4010387	470nF 16V	
C213	4001113	1.5pF 50V		C238	4000493	1.2nF ±10% 50V	
C214-	4001125	15pF 50V		C239	4000494	4.7nF ±10% 50V	
C215				C240	4000495	3.3nF ±10% 50V	
C216	4001143	470pF 50V		C241	4000496	33nF ±10% 50V	
C217	4001125	15pF 50V		C242	4010419	4.7µF 10V	
C218-	4011135	100nF 25V		C243	4011134	100nF 16V	
C219				C244	4000495	3.3nF ±10% 50V	
C220	4001143	470pF 50V		C245	4010420	10µF 10V	
C221	4001120	5.6pF ±0.25pF		C246	4001136	120pF 50V	
C247	4011130	47nF 16V		C298	4010420	10µF 10V	
C248-	4010420	10µF 10V		C300	4010419	4.7µF 10V	
C250				C301	4011128	33nF 25V	
C251	4010316	100nF 25V		C302	4011120	6.8nF 50V	
C252-	4011134	100nF 16V		C303	4011130	47nF 16V	
C253				C304	4010421	1µF 16V	
C254	4010421	1µF 16V		C305	4010435	10µF 25V	
C255	4011134	100nF 16V		C306	4010419	4.7µF 10V	
C256	4010316	100nF 25V		C307	4011134	100nF 16V	
C258	4010274	100nF 25V		C309-	4010420	10µF 10V	
C259	4001135	100nF 25V		C310			
C260-	4011122	10nF 50V		C311	4010237	1nF 50V	
C261				C312	4011110	1nF 50V	
C262	4010419	4.7µF 10V		C313	4010237	1nF 50V	
C263	4001130	39pF 50V		C314-	4011110	1nF 50V	
C264	4001133	68pF 50V		C317			
C265	4001130	39pF 50V		C318	4001138	180pF 50V	
C266	4010322	4.7µF 16V		C400	4011110	1nF 50V	
C267	4011134	100nF 16V		C401	4010321	470nF 16V	
C268	4010420	10µF 10V		C402	4011122	10nF 50V	
C269-	4011134	100nF 16V		C403	4010237	1nF 50V	
C270				C404-	4001131	47pF 50V	
C271-	4001127	22pF 50V		C407			
C272				C408	4010321	470nF 16V	
C273	4001132	56pF 50V		C409	4011110	1nF 50V	
C274	4001125	15pF 50V		C410	4011056	1nF 50V	
C275	4001129	33pF 50V		C411	4001134	82pF 50V	
C276	4000494	4.7nF 50V		C412	4011122	10nF 50V	
C277	4010421	1µF 16V		C413	4011110	1nF 50V	
C278	4010316	100nF 25V		C414	4001141	330pF 50V	
C279	4011134	100nF 16V		C415	4011122	10nF 50V	
C281-	4000408	47pF 50V		C416	4010419	4.7µF 10V	
C282				C417	4011122	10nF 50V	
C283-	4010274	100nF 25V		C418	4001143	470pF 50V	
C286				C419	4001131	47pF 50V	
C288	4000494	4.7nF 50V		C420	4001134	82pF 50V	
C289-	4010274	100nF 25V		C421	4011110	1nF 50V	
C290				C422	4010321	470nF 16V	
C291	4011134	100nF 16V		C502	4010316	100nF 25V	
C292-	4011122	10nF 50V		C503	4010434	4.7µF 16V	
C294				C505	4010316	100nF 25V	
C295	4001143	470pF 50V		C506	4010315	22nF 50V	
C296	4011135	100nF 25V		C507	4011122	10nF 50V	

L200	8021078	Coil 1µH		L213-	8020714	Coil 68uH	
L201	8021319	Coil 97nH		L214			
L202-	8021320	Coil 97nH		L215	6000064	Jumper	
L203				L216-	8020821	Coil 2.2uH	
L204	8021318	Coil 71nH		L217			
L205	8021374	Transformer 10.7MHz		L218	8021366	Transformer	
L206	8021321	Coil 10.7MHz		L301-	6000064	Jumper	
L207	8021325	Coil 1mH 1%		L302			
L208	8021323	Transformer 450kHz		L303	8021345	Coil 10mH	
L209	8020909	Transformer 330mH		L400-	8020821	Coil 2.2uH	
L210	8021324	Coil 10uH		L404			
L211-	8020626	Coil 470uH		L500-	6000064	Jumper	
L212				L501			

BP200	8030391	Cer. filter 450KHz
BP201-	8030400	Cer. filter 10.7MHz
BP203		

X200	8090274	Crystal 10.25MHz	X400	8090206	Crystal 8.664MHz

F500	6604039	Fuse 200mA

FE200-	6710060	Ferrite
FE201		

P101	7221373	Male connector	P106	7211222	Socket 6 pole
P103	7211221	Socket 4 pole	P107	7221082	Plug 2 pole

Δ *indicates that static electricity may destroy the component*

PCB1, 8000535 FM/AM - RDS
Type 2574

C202	4000401	12pF 50V	C274	4001127	22pF 50V
C203	4001125	15pF 50V	C275	4001131	47pF 50V
C213	4001120	5.6pF 50V	C297	4000401	12pF 50V
C221	4001126	18pF			
C222-C223	4001119	4.7pF 50V			

L201	8021385	Coil 108nH
L202-L203	8021384	Coil 108nH
L204	8021350	Coil164nH

Other electrical parts like PCB1, type 2571, 2572, 2573, 2575, 2576, 2577, 2580

PCB3, 8000513 Main Microcomputer

IC3Δ	8343945	**147**	SW IC

PCB4, 8000463 Mains Filter

L1⚠	8022318	Coil 2 x 3.3mH
P85-P86	7221057	Plug 2/3 pole

PCB5, 8005661 Mains relay
Type 2571, 2572, 2574, 2575, 2577, 2580

D1-D2	8300915	**209**	GF 1M
D3	8301045	**250**	BAS216

C1	4200821	1000µF -20+50% 6.3V
RL1⚠	7600120	Relay 5V
F1⚠	6600084	Fuse 100mAT 250V
P82	7221057	Plug 2/3 pole
P83	7211221	Socket 4 pole
P84	7221163	Plug 4/3 pole

PCB5, 8005664 Mains relay
Type 2573, 2576

R1	5000194	3.3MΩ 10% 1/2W
F1⚠	6600164	Fuse 100mAT 125V

Other electrical parts like PCB5, type 2571, 2572, 2574, 2575, 2577, 2580

PCB7, 8005364 Display

IC1Δ	8342095	**138**	74HC138	IC8Δ	8341277	**138**	74HC14
IC2Δ	8342270	**138**	TIMER 555	IC50Δ	8341857	**138**	LM339
IC3Δ	8340740	**138**	4013	IC51Δ	8340433	**138**	74HC86
IC4Δ-IC5Δ	8342681	**138**	SI9958DY	IC52Δ	8341812	**138**	LM393

TR50	8320755	**51**	BC847B	TR53	8320811	**51**	BC857B

D1	8300606	**250**	LL4448	D13	8300606	**250**	LL4448
D2-D3	8300907	**256**	GF1B	D15	8300606	**250**	LL4448
D4	8330387	**265**	Led red	D50-D55	8300606	**250**	LL4448
D5-D6	8300606	**250**	LL4448				

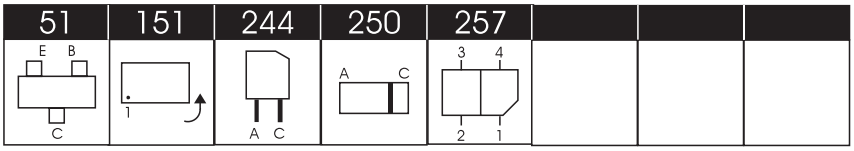
R59	5013256	39KΩ 1% 1/16W

C1-C3	4010274-	100nF -20+80% 25V	C10-C11	4201448	330µF 20% 6.3V
C4	4010272	22nF -20+80% 50V	C12-C13	4010321	470nF -20+80% 16V
C5	4010274	100nF -20+80% 25V			
C6	4010314	220nF -20+80% 25V	C14-C15	4001143	470pF 5% 50V
C7	4010315	22nF 10% 25V			
C8-C9	4010321	470nF -20+80% 16V	C16	4001135	100pF 5% 50V

⚠ *symbol of safety component, see page 2.1*

Δ *indicates that static electricity may destroy the component*

⇨



Resistors not referred to are standard, see page 3.13 and 3.14

C17-C18	4001143	470pF 5% 50V	C23	4001135	100pF 5% 50V
C20-C21	4001135	100pF 5% 50V	C50	4010274	100nF -20+80% 25V
C22	4010274	100nF -20+80% 25V	C51-C52	4010323	1µF -20+80% 16V
IL1	8230125	Bulb, 190mA 6.3V			
P62	7211134	Socket 6 pole	P68	7210889	Socket 4 pole
P63	7210893	Socket 12 pole	P69	7211133	Socket 5 pole

PCB9, 8005312 Sledge position

PE1Δ	8330388	TCVT1300
R1-R2	5011853	158Ω 1% 1/4W
P78	7211221	Socket 4 pole

PCB11, 8005295 Main keyboard, right

S1-S4	7400429	Switch 1 pole
P97	7211136	Socket 4 pole

PCB12, 8005296 Main keyboard, left

S1-S4	7400429	Switch 1 pole
P72	7211054	Socket
P98	7211136	Socket 4 pole

PCB13, 8005313 Secondary keyboard

IC1Δ	8342095	**151**	74HC138
IC2Δ	8342297	**151**	74HC147
TR1	8320755	**51**	BC847B
C1-C2	4010316		100nF 10% 25V
C4	4010271		10nF 10% 50V
P71	7211057		Socket 12 pole

PCB14, 8005299 IR Receiver

TR1	8321278		BC849CW	TR5	8320740	**51**	BF840
TR2	8320740	**51**	BF840	TR6-TR7	8321187	**51**	BC846BW
TR3	8321187	**51**	BC846BW				
TR4	8321188	**51**	BC856BW				
D33-D36	8301045	**250**	BAS216	D38-D39	8330393	**244**	IR detector 880nm BPW34FAS
D37	8330145	**244**	IR detector 880nm 455KHz				
R7	5011303		470Ω 5% 1/4W	R23	5021512		220Ω 1% 1/4W
C1	4011134		100nF 10% 16V	C6	4001131		47pF 5% 50V
C2	4001143		470pF 5% 50V	C7	4000442		2.2nF 5% 50V
C3	4010334		220nF 10% 16V	C8	4010387		470nF 10% 16V
C4	4001131		47pF 5% 50V	C10	4001143		470pF 5% 50V
C5	4001143		470pF 5% 50V	C11	4001131		47pF 5% 50V

Δ indicates that static electricity may destroy the component

C12-C13	4001143	470pF 5% 50V	C15	4011134	100nF 10% 16V
			C20	4011124	15nF 10% 50V
C14	4001131	47pF 5% 50V	C21	4011110	1nF 10% 50V
L1	8020744	Coil 455KHz			
BP1	8030392	Cer. filter 455KHz			
P49	7211053	Socket 4 pole			

PCB20, 8001824 ML interface

IC1Δ-IC7Δ	8341022	**151** 4558	IC8Δ-IC10Δ	8341024	**151** 4066
TR3	8320811	**51** BC857B	TR6	8320811	**51** BC857B
TR4-TR5	8320755	**51** BC847B			
R2	5011841	11.8KΩ 1% 1/8W	R14-R15	5011557	10KΩ 1% 1/8W
R4	5011841	11.8KΩ 1% 1/8W			
R5-R6	5011531	5.9KΩ 1% 1/8W	R19-R20	5011557	10KΩ 1% 1/8W
R8	5011841	11.8KΩ 1% 1/8W	R23-R26	5011571	75Ω 1% 1/8W
R10	5011841	11.8KΩ 1% 1/8W			
R11-R12	5011531	5.9KΩ 1% 1/8W			
C1-C2	4000277	22pF 5% 50V	C11-C14	4010166	100nF -20+80% 50V
C3-C4	4000241	100pF 5% 50V	C100-C101	4000345	1.0nF 5% 50V
C6-C7	4000241	100pF 5% 50V			

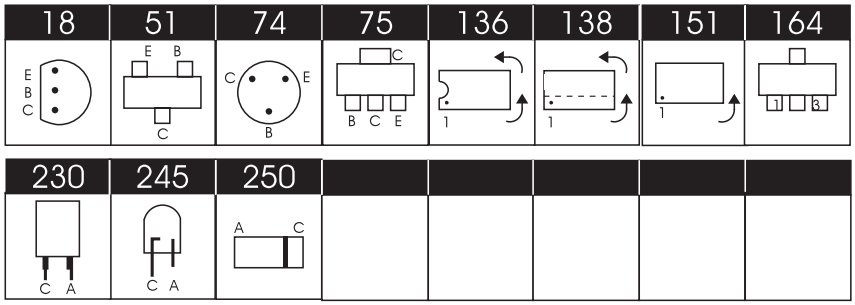
PCB21, 8005301 Headphone

C1-C2	4011110	1.0nF 10% 50V	C3-C4	4010271	10nF 10% 50V
P1	7210510	Jack socket	P80	7211221	Socket 4 pole

PCB22, 8000514 Clamper position

IC1-IC2	8341041	**151** LM324			
TR1	8320755	**51** BC847B			
PE1-PE3	8330478	**257** Optocoupler			
R1	5011188	330Ω 5% 1/4W	R25	5012366	20KΩ 1% 1/8W
R8	5011188	330Ω 5% 1/4W	R28	5012239	39KΩ 1% 1/8W
R15	5011188	330Ω 5% 1/4W	R29-R30	5012290	4.87KΩ 1% 1/8W
R23	5012278	240KΩ 1% 1/8W			
R24	5012316	56.2KΩ 1% 1/8W	R33	5012366	20KΩ 1% 1/8W
C1	4010271	10nF 10% 50V	C10	4010237	1nF 10% 50V
C4-C5	4010274	100nF -20+80%	C11	4000415	180pF 5% 50V
			C12	4010237	1nF 10% 50V
C6	4010237	1nF 10% 50V	C13	4000412	100pF 5% 50V
C7	4010263	2.2nF 10% 50V	C14	4010237	1nF 10% 50V
C8-C9	4010272	22nF -20+80% 50V	C15	4000412	100pF 5% 50V
P60	7211234	Socket 12 pole			
P61	7211340	Socket 6 pole			
P64	7221272	Plug 2 pole			

Δ *indicates that static electricity may destroy the component*



Resistors not referred to are standard, see page 3.13 and 3.14

PCB24, 8005304
Light indication, left

TR1-TR6	8320755	**51**	BC847B
D4-D6	8330387	**230**	Led red
P73	6276998		Plug 8 pole
P74	6276913		Plug 4 pole

PCB25, 8005305
Light indication, right

D1-D3	8330387	**230**	Led red

PCB26, 8005315 End stop detector

IC1Δ	8342715	**164**	A3141ELT
C1	4010274		100nF -20+80% 25V
C2	4010323		1µF -20+80% 16V
P75	7211054		Socket 6 pole
P96	7211053		Socket 4 pole

PCB27, 8005377 Safety TX

D1	8330266	**245**	TSHA4480

PCB28, 8005303 Safety RX

TR1	8330363	**74**	BPW77
TR2	8320755	**51**	BC847B
C4	4010323		1µF -20+80% 16V

PCB29, 8005309 Lamp

IL1	8230125		Bulb, 190mA 6.3V

PCB30, 8001865
IR transmitter, tacho clamper

PCB31, 8001866
IR receiver, tacho clamper

PCB32, 8005399
Input/Output select and sound adj.

IC1Δ-IC2Δ	8341025	**138**	4094	IC12Δ	8341022	**138**	4558
				IC400Δ	8342869	**151**	CS8412
IC3Δ	8341059	**138**	4052	IC401Δ	8342497	**151**	TDA1305
IC4Δ	8342238	**151**	TDA7318D	IC402Δ	8342950	**151**	EL2045CS
IC6Δ	8340205	**151**	LF347	IC500Δ*	8342500	**151**	Asic-ML Data
IC7Δ-IC10Δ	8341022	**138**	4558	IC600Δ*	8342900	**151**	Asic-PL Data

TR1	8320512	**18**	BC338-25	TR15-TR18	8320941	**51**	2SC4213
TR2	8320523	**18**	BC328-25				
TR3	8320755	**51**	BC847B	TR19-TR26	8321080	**51**	FMMT491A
TR6	8320755	**51**	BC847B				

** specially selected or adapted sample*

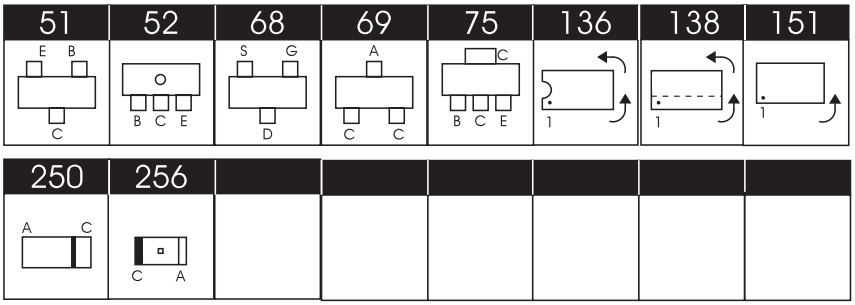
Δ indicates that static electricity may destroy the component

TR27-TR28	8320755	**51**	BC847B
TR29	8320811	**51**	BC857B
TR400-TR401	8321171	**75**	FZT790A
TR402-TR404	8320755	**51**	BC847B
TR405	8320811	**51**	BC857B
TR500	8321159	**51**	FMMT489
TR600	8321198	**136**	PUMX1
TR601-TR602	8321197	**136**	PUMT1
TR603	8321202	**51**	PDTC114EU

D2-D3	8300644	**250**	Z6.2V 2% 0.5W
D4-D5	8301045	**250**	BAS216
D10-D14	8301045	**250**	BAS216
D15-D16	8300636	**250**	Z7.5V 5% 0.5W
D17-D18	8300723	**250**	Z8.2V 2% 0.5W
D19	8300762	**250**	Z9.1V 2% 0.5W
D20-D21	8301045	**250**	BAS216
D400	8300563	**250**	Z5.1V 2% 0.5W
D500-D505	8301045	**250**	BAS216
D600-D601	8300520	**250**	Z6.8V 5% 0.5W

R141-R148	5012331	10KΩ 1% 1/10W
R194-R201	5012331	10KΩ 1% 1/10W
R250	5012290	4.87KΩ 1% 1/10W
R251	5012297	5.62KΩ 1% 1/10W
R253	5012290	4.87KΩ 1% 1/10W
R254	5012297	5.62KΩ 1% 1/10W
R400	5021391	75Ω 1% 1/4W
R406-R409	5021524	47Ω 1% 1/4W
R425	5013223	68Ω 1% 1/16W
R505	5011599	49.9KΩ 1% 1/8W
R600	5021484	100Ω 1% 1/4W
R602	5021484	100Ω 1% 1/4W
R604	5030052	4 x 4.7KΩ 5% 1/16W
R605	5030054	4 x 100KΩ 5% 1/16W
R606	5030052	4 x 4.7KΩ 5% 1/16W
R607	5030050	4 x 10KΩ 5% 1/16W
R608	5030053	4 x 47KΩ 5% 1/16W
R609	5030050	4 x 10KΩ 5% 1/16W
R610	5030055	4 x 180KΩ 5% 1/16W
R611	5030054	4 x 100KΩ 5% 1/16W

C1-C4	4000420	470pF 5% 50V
C5-C6	4000351	1.5nF 5% 50V
C7-C14	4000408	47pF 5% 50V
C17-C22	4000412	100pF 5% 50V
C33-C38	4000416	220pF 5% 50V
C41-C42	4000424	1nF 5% 50V
C43	4010237	1.0nF 10% 50V
C45-C46	4000424	1nF 5% 50V
C49-C50	4010237	1.0nF 10% 50V
C51-C52	4000424	1nF 5% 50V
C53	4010237	1.0nF 10% 50V
C54	4010271	10nF 10% 50V
C56	4010271	10nF 10% 50V
C59-C64	4010271	10nF 10% 50V
C66-C71	4010271	10nF 10% 50V
C73	4010271	10nF 10% 50V
C74-C79	4010274	100nF -20+80% 25V
C82-C85	4010274	100nF -20+80% 25V
C86-C89	4130307	150nF 10% 63V
C90-C107	4200916	4.7µF 20% 25V
C108-C109	4010271	10nF 10% 50V
C110	4000281	82pF 5% 50V
C111-C112	4201163	10µF 20% 35V
C113-C114	4201164	47µF 20% 10V
C116	4201391	10µF 20% 50V
C130	4000414	150pF 5% 50V
C131	4000457	1.5nF 5% 50V
C132	4000414	150pF 5% 50V
C133	4000457	1.5nF 5% 50V
C134-C135	4010271	10nF 10% 50V
C150	4200972	4.7µF 20% 10V
C400	4000408	47pF 5% 50V
C401	4010274	100nF -20+80% 25V
C402	4010273	47nF -20+80% 50V
C403	4010274	100nF -20+80% 25V
C404	4201164	47µF 20% 10V
C405-C406	4000424	1nF 5% 50V
C407-C408	4010274	100nF -20+80% 25V
C411	4201348	1µF 10% 16V
C412-C414	4010274	100nF -20+80% 25V
C415-C416	4201163	10µF 20% 35V
C417-C422	4010274	100nF -20+80% 25V
C500	4010237	1.0nF 10% 50V
C501	4000416	220pF 5% 50V
C502	4000412	100pF 5% 50V
C503	4010316	100nF 10% 25V
C504	4010274	100nF -20+80% 25V
C505-C507	4201163	10µF 20% 35V
C600	4010274	100nF -20+80% 25V
C601-C602	4010132	1.0nF 10% 50V
C603	4000408	47pF 5% 50V
C604	4000416	220pF 5% 50V



Resistors not referred to are standard, see page 3.13 and 3.14

L1- L4	8020705		Coil 100µH 10%	L5- L6	8020821		Coil 2.2µH 5%
T400	8021159		Transformer 796KHz				
P1	7210418		Socket 7 pole	P22	7211227		Socket 16 pole
P2- P3	7210689		Socket 8 pole	P23 P24	7500296 7211221		Contact pin Socket 4 pole
P4	7210904		Socket 16 pole	P26	7221272		Plug 2/2 pole
P20	7211221		Socket 4 pole	P27	7221181		Plug 2 pole
P21	7211223		Socket 8 pole				

PCB34, 8000512
Power Supply
Type 2571, 2572, 2574, 2575, 2577, 2580

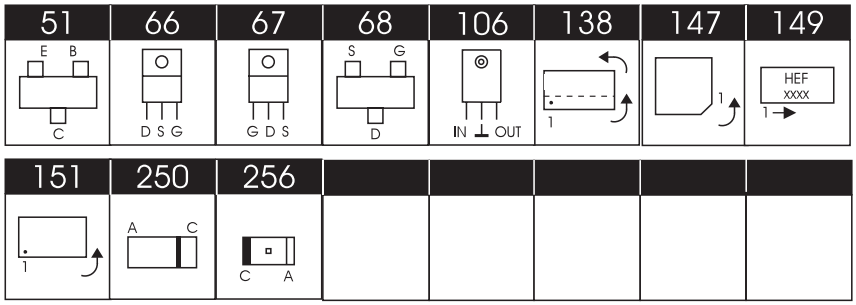
IC1Δ	8343327	**138**	74HC4538	IC7Δ	8343333	**138**	4094B
IC2Δ	8341812	**138**	LM393	IC10Δ	8342397	**138**	M41T56M6
IC3Δ- IC5Δ	8342673	**151**	LM3578	IC14Δ	8343330	**138**	74HC138
TR1-	8321198	**136**	PUMX1	TR32	8321193	**75**	FZT788B
TR2				TR33	8321198	**136**	PUMX1
TR3	8321187	**51**	BC846BW	TR34	8321171	**52**	FZT790A
TR4	8321188	**51**	BC856BW	TR35	8321198	**136**	PUMX1
TR5	8321187	**51**	BC846BW	TR36	8321193	**75**	FZT788B
TR6	8320936	**51**	BC847C	TR37	8321198	**136**	PUMX1
TR7	8321198	**136**	PUMX1	TR38-	8320856	**68**	2N7002
TR8-	8320740	**51**	BF840	TR40			
TR9				TR41	8321188	**51**	BC856BW
TR10	8321363	**69**	STD10PF06	TR42	8320740	**51**	BF840
TR11	8321188	**51**	BC856BW	TR43	8321188	**51**	BC856BW
TR12	8321187	**51**	BC846BW	TR44	8320740	**51**	BF840
TR14	8320936	**51**	BC847C	TR46	8321188	**51**	BC856BW
TR15	8321363	**69**	STD10PF06	TR47	8321187	**51**	BC846BW
TR16	8321188	**51**	BC856BW	TR48	8321198	**136**	PUMX1
TR17	8320752	**51**	BC817-40	TR49	8321193	**75**	FZT788B
TR20	8321187	**51**	BC846BW	TR50-	8321187	**51**	BC846BW
TR21	8321363	**69**	STD10PF06	TR53			
TR22	8321188	**51**	BC856BW	TR54	8321188	**51**	BC856BW
TR24	8320936	**51**	BC847C	TR55-	8321187	**51**	BC846BW
TR25	8321187	**51**	BC846BW	TR57			
TR27-	8320740	**51**	BF840	TR58	8321188	**51**	BC856BW
TR28				TR59-	8321187	**51**	BC846BW
TR30	8321193	**75**	FZT788B	TR60			
TR31	8321198	**136**	PUMX1				
D1	8300949		Bridge	D15	8301061	**256**	Z3.9V 2% 0.4W
D2	8301045	**250**	BAS216	D17	8301045	**250**	BAS216
D3	8301072	**256**	Z10V 2% 0.4W	D19	8301072	**256**	Z10V 2% 0.4W
D4	8301061	**256**	Z3.9V 2% 0.4W	D20	8301217	**250**	STPS3L60S
D5	8301045	**250**	BAS216	D21	8301104	**250**	SM6T15C
D8	8301072	**256**	Z10V 2% 0.4W	D22-	8301045	**250**	BAS216
D9	8301217	**250**	STPS3L60S	D23			
D10	8301103	**250**	SM6T7V5CA	D24	8301218	**256**	BAT254
D11	8301045	**250**	BAS216	D25	8301045	**250**	BAS216
D12	8301061	**256**	Z3.9V 2% 0.4W	D27	8301072	**256**	Z10V 2% 0.4W
D13	8301218	**256**	BAT254	D28	8301217	**250**	STPS3L60S
D14	8301064	**256**	Z5.1V 2% 0.4W	D29	8301045	**250**	BAS216

Δ *indicates that static electricity may destroy the component*

D30	8301218	**256**	BAT254	D40-	8301045	**250**	BAS216
D31	8301217	**250**	STPS3L60S	D46			
D33	8301059	**256**	Z3.3V 2% 0.4W	D47	8301061	**256**	Z3.9V 2% 0.4W
D34	8301104	**250**	SM6T15C				

R4	5030054	4 x 100KΩ 5% 1/16W	R92	5012382	10KΩ 0.1% 1/4W
R5	5021508	47KΩ 1% 1/4W	R93	5012169	220KΩ 1% 1/4W
R7	5021508	47KΩ 1% 1/4W	R94	5023032	3.3MΩ 1% 1/4W
R17	5012382	10KΩ 0.1% 1/4W	R95-	5021542	0.22Ω 5% 1/4W
R18	5023035	560KΩ 1% 1/4W	R97		
R19	5023052	470KΩ 1% 1/4W	R100	5013172	105KΩ 1% 1/8W
R20	5012175	43.2KΩ 1% 1/4W	R102-	5021484	100Ω 1% 1/4W
R25-	5021542	0.22Ω 5% 1/4W	R103		
R28			R114	5030052	4 x 4.7KΩ 5% 1/16W
R36	5012200	2.2KΩ 1% 1/4W	R141	5030052	4 x 4.7KΩ 5% 1/16W
R38-	5021484	100Ω 1% 1/4W	R143	5013247	6.8KΩ 1% 1/16W
R39			R146	5013264	180KΩ 1% 1/16W
R40-	5012200	2.2KΩ 1% 1/4W	R154	5030051	4 x 1KΩ 5% 1/16W
R41			R155	5012209	1.87KΩ 1% 1/4W
R44	5030054	4 x 100KΩ 5% 1/16W	R161	5013246	5.6KΩ 1% 1/16W
R47-	5021508	47KΩ 1% 1/4W	R171	5012209	1.87KΩ 1% 1/4W
R49			R187	5012209	1.87KΩ 1% 1/4W
R54	5030054	4 x 100KΩ 5% 1/16W	R192	5013246	5.6KΩ 1% 1/16W
R61	5012382	10KΩ 0.1% 1/4W	R195	5012209	1.87KΩ 1% 1/4W
R62-	5021542	0.22Ω 5% 1/4W	R209	5021484	100Ω 1% 1/4W
R65			R210-	5030052	4 x 4.7KΩ 5% 1/16W
R66	5011843	80.6KΩ 1% 1/4W	R211		
R67	5021225	10KΩ 1% 1/4W	R234	5030053	4 x 47KΩ 5% 1/16W
R70-	5021484	100Ω 1% 1/4W	R245	5030052	4 x 4.7KΩ 5% 1/16W
R71			R336	5012200	2.2KΩ 1% 1/4W
R75	5030051	4 x 1KΩ 5% 1/16W	R339	5021542	0.22Ω 5% 1/4W
R88	5030054	4 x 100KΩ 5% 1/16W			

C1-	4010216	22nF 10% 100V	C43-	4011110	1nF 10% 50V
C4			C44		
C5	4201179	15000µF 20% 50V	C45	4001127	22pF 5% 50V
C6-	4010216	22nF 10% 100V	C46	4011110	1nF 10% 50V
C7			C47	4200916	4.7µF 20% 25V
C8	4201406	330µF 20% 50V	C48	4000442	2.2nF 5% 50V
C9	4201163	22µF 20% 6.3V	C49	4011135	100nF -20+80% 16V
C10	4010216	22nF 10% 100V	C50	4201407	820µF 20% 25V
C11	4011135	100nF -20+80% 16V	C51	4011122	10nF 10% 50V
C12	4010216	22nF 10% 100V	C52	4011110	1nF 10% 50V
C13	4201178	8200µF 20% 10V	C53	4201541	22µF 20% 50V
C14-	4011122	10nF 10% 50V	C54	4011110	1nF 10% 50V
C15			C55	4001133	68pF 5% 50V
C16	4201163	22µF 20% 6.3V	C56	4001135	100pF 5% 50V
C17	4001127	22pF 5% 50V	C57	4011135	100nF -20+80% 16V
C18-	4011122	10nF 10% 50V	C58-	4011122	10nF 10% 50V
C19			C59		
C21	4011122	10nF 10% 50V	C61	4011135	100nF -20+80% 16V
C22	4000442	2.2nF 5% 50V	C63	4011122	10nF 10% 50V
C23	4010216	22nF 10% 100V	C66	4011122	10nF 10% 50V
C24	4001131	47pF 5% 50V	C71	4011122	10nF 10% 50V
C25	4011135	100nF -20+80% 16V	C76	4011056	4 x 1nF 10%
C26	4201163	22µF 20% 6.3V	C79	4201348	1µF 10% 16V
C27	4010216	22nF 10% 100V	C80	4001131	47pF 5% 50V
C28	4201407	820µF 20% 25V	C82	4001133	68pF 5% 50V
C30	4011122	10nF 10% 50V	C86	4200972	4.7µF 20% 10V
C31	4001127	22pF 5% 50V	C87	4201362	2.2µF 10% 10V
C32	4010220	100nF 10% 50V	C92	4001131	47pF 5% 50V
C33	4011135	100nF -20+80% 16V	C98	4011122	10nF 10% 50V
C34	4200916	4.7µF 20% 25V	C99	4001133	68pF 5% 50V
C35	4000442	2.2nF 5% 50V	C102	4011135	100nF -20+80% 16V
C37	4010216	22nF 10% 100V	C103	4201348	1µF 10% 16V
C38	4201348	1µF 10% 16V	C104	4011122	10nF 10% 50V
C39	4201407	820µF 20% 25V	C108	4011122	10nF 10% 50V
C40	4011122	10nF 10% 50V	C111	4011122	10nF 10% 50V
C41	4011110	1nF 10% 50V	C112	4011056	4 x 1nF 10%
C42	4201254	33µF 20% 16V	C113	4201337	1000µF 20% 10V



Resistors not referred to are standard, see page 3.13 and 3.14

C114	4001131	47pF 5% 50V	C120-	4000466	470pF 5% 100V
C115	4011122	10nF 10% 50V	C123		
C116	4201348	1µF 10% 16V			
L1	8021113	Coil 47µH 10%	L5	8020916	Coil 47µH 5%
L2	8020772	Coil 10µH 20%	L7	8020916	Coil 47µH 5%
L3-	8020914	Coil 470µH 15%	L8	8021079	Coil 2.2µH 10%
L4			L14	8021113	Coil 47µH 10%
F1⚠	6600145	Fuse 5AT 250V	F2⚠	6600155	Fuse 1.6AT 250V
T1	8021268	Transformer 2 x 470µH			
X2	8090230	Crystal 32.768KHz			
B1⚠*	8700029	Lithium battery			
P1	7211227	Socket 16 pole	P12	7211222	Socket 6 pole
P2	7211223	Socket 8 pole	P13	7211225	Socket 12 pole
P3	7211222	Socket 6 pole	P14	7211221	Socket 4 pole
P4	7221272	Plug 2 pole	P15	6030359	Ground wire
P5-	7211234	Socket 12 pole	P16	7211221	Socket 4 pole
P8			P17	7221057	Plug 2/3 pole
P9	7221133	Plug 8/8 pole	P20-	7221357	Socket 30 pole
P10	7211229	Socket 20 pole	P21		
P11	7211223	Socket 8 pole			

PCB34, 8000536 Power Supply

Type 2573, 2576

F1⚠	6600163	Fuse 5AT 125V
F2⚠	6600162	Fuse 1.6AT 125V

Other electrical parts like PCB34, type 2571, 2572, 2574, 2575, 2577, 2580

PCB35, 8006777 Motor Control

IC1Δ	8341747	**138**	TL7705BCD	IC8Δ	8342552	**138**	DAC 0854
IC2Δ*	8343407	**147**	87C654	IC9Δ-	8341041	**138**	LM324
IC3Δ	8340433	**138**	74HC86	IC10Δ			
IC4Δ	8340571	**138**	74HC74	IC11Δ	8341857	**138**	LM339
IC5Δ-	8343333	**149**	4094B	IC12Δ-	8341682	**151**	TCA0372
IC6Δ				IC13Δ			
IC7Δ	8340244	**106**	LM317	IC25Δ	8341098	**138**	LM358
TR1-	8321188	**51**	BC856BW	TR25-	8321187	**51**	BC846BW
TR3				TR32			
TR4-	8321187	**51**	BC846BW	TR33	8321188	**51**	BC856BW
TR6				TR34	8320752	**51**	BC817-40
TR8-	8321187	**51**	BC846BW	TR35-	8320856	**68**	2N7002
TR12				TR36			
TR14-	8321187	**51**	BC846BW	TR40	8321187	**51**	BC846BW
TR15				TR43	8321187	**51**	BC846BW
TR16	8321176	**51**	FZT951	TR44	8321188	**51**	BC856BW
TR18-	8321016	**67**	BUZ71A	TR47-	8321187	**51**	BC846BW
TR19				TR48			
TR20-	8321154	**66**	BUZ271	TR49	8320971	**51**	BC807-40
TR21				TR338	8321188	**51**	BC856BW
				TR339	8321187	**51**	BC846BW

⚠ *symbol of safety component, see page 2.1*

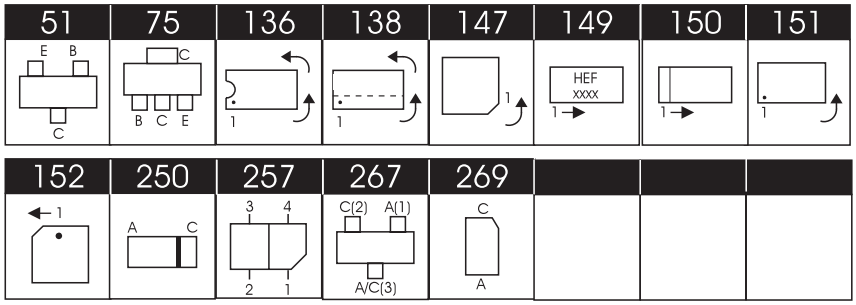
** specially selected or adapted sample*

Δ *indicates that static electricity may destroy the component*

D1-D6	8301045	**250**	BAS216
D8-D9	8301045	**250**	BAS216
D12-D15	8300915	**250**	GF1M
D16	8301059	**256**	Z3.3V 2% 0.4W
D17-D20	8301076	**256**	Z15V 2% 0.4W
D21	8301081	**256**	Z24V 2% 0.4W
D22	8301045	**250**	BAS216
D24	8301076	**256**	Z15V 2% 0.4W
D30-D32	8301045	**250**	BAS216
D35-D37	8301045	**250**	BAS216
D38	8301074	**256**	Z12V 2% 0.4W
D39	8301045	**250**	BAS216
D42	8301067	**250**	Z6.8V 2% 0.4W
D50	8301077	**256**	Z16V 2% 0.4W
D51	8301056	**256**	Z2.7V 2% 0.4W
D52-D55	8301045	**250**	BAS216

R45	5012239	39KΩ 1% 1/10W
R58-R64	5012200	2.2KΩ 1% 1/4W
R75	5013235	680Ω 1% 1/16W
R78	5013235	680Ω 1% 1/16W
R80	5012142	60mΩ
R148-R151	5021151	1.5Ω 1% 1/4W
R152	5023002	11.3KΩ 1% 1/4W
R153	5021225	10KΩ 1% 1/4W
R156-R157	5021508	47KΩ 1% 1/4W
R159	5021508	47KΩ 1% 1/4W
R160-R161	5021372	5.36KΩ 1% 1/4W
R164	5021372	5.36KΩ 1% 1/4W
R165-R166	5012209	1.87KΩ 1% 1/4W
R169-R170	5023000	1.2KΩ 1% 1/4W
R171	5013256	39KΩ 1% 1/16W
R191	5021484	100Ω 1% 1/4W
R194-R197	5021151	1.5Ω 1% 1/4W
R203	5021225	10KΩ 1% 1/4W
R212	5013256	39KΩ 1% 1/16W
R225	5011903	180Ω 1% 1/4W
R226	5011853	158Ω 1% 1/4W
R247	5021225	10KΩ 1% 1/4W
R278	5021225	10KΩ 1% 1/4W
R280	5013264	180KΩ 1% 1/16W
R331	5021372	5.36KΩ 1% 1/4W
R346-R349	5012200	2.2KΩ 1% 1/4W
R362	5023026	39.2Ω 1% 1/4W
R365	5370470	10KΩ

C1	4010274	100nF -20+80% 25V
C2	4001127	22pF 5% 50V
C3	4011110	1.0nF 10% 50V
C4	4010274	100nF -20+80% 25V
C5	4010267	4.7nF 10% 50V
C7	4010267	4.7nF 10% 50V
C8-C9	4010274	100nF -20+80% 25V
C10-C14	4011110	1.0nF 10% 50V
C15-C17	4001141	330pF 5% 50V
C18-C19	4011110	1.0nF 10% 50V
C20	4001141	330pF 5% 50V
C21	4011110	1.0nF 10% 50V
C22-C25	4001141	330pF 5% 50V
C26	4011110	1.0nF 10% 50V
C27-C28	4001131	47pF 5% 50V
C29-C31	4011110	1.0nF 10% 50V
C32-C35	4001141	330pF 5% 50V
C36-C37	4011110	1.0nF 10% 50V
C38	4000287	220nF -20+80% 25V
C39-C42	4010220	100nF 10% 50V
C43	4000287	220nF -20+80% 25V
C44	4011110	1.0nF 10% 50V
C45	4010271	10nF 10% 50V
C46	4010274	100nF -20+80% 25V
C47	4010271	10nF 10% 50V
C49-C50	4010220	100nF 10% 50V
C51	4010271	10nF 10% 50V
C53	4010272	22nF -20+80% 50V
C54-C55	4010220	100nF 10% 50V
C57-C61	4010274	100nF -20+80% 25V
C63-C64	4010220	100nF 10% 50V
C65	4200898	22µF 20% 6V3
C66	4201330	220µF 20% 50V
C67-C69	4010220	100nF 10% 50V
C70	4000409	56pF 5% 50V
C71	4010307	33nF 10% 25V
C72	4000414	150pF 5% 50V
C73	4010216	22nF 10% 100V
C74-C75	4010274	100nF -20+80% 25V
C76-C77	4011110	1.0nF 10% 50V
C80	4011110	1.0nF 10% 50V
C81	4010220	100nF 10% 50V
C82-C83	4001141	330pF 5% 50V
C84	4011110	1.0nF 10% 50V
C90-C93	4011110	1.0nF 10% 50V
C100	4010274	100nF -20+80% 25V
C101	4200858	220µF 20% 50V
C102-C103	4001141	330pF 5% 50V
C104	4200916	4.7µF 20% 25V
C186	4010274	100nF -20+80% 25V
C301-C302	4011110	1.0nF 10% 50V
C306	4011110	1.0nF 10% 50V
C307	4010274	100nF -20+80% 25V
C320	4011110	1.0nF 10% 50V
C321	4010220	100nF 10% 50V
C430	4011110	1.0nF 10% 50V
C501	4001127	22pF 5% 50V
C502	4200916	4.7µF 20% 25V
C504	4010274	100nF -20+80% 25V



Resistors not referred to are standard, see page 3.13 and 3.14

L1 L2- L5	8020772 8021079	Coil 10µH 20% Coil 2.2µH 10%					
X1	8090182	Crystal 16MHz					
CP1	7530117	Contact pin					
P50 P51 P52	7211229 7221133 7211053	Socket 20 pole Plug 8/8 pole Socket 4 pole		P53 P54- P55	7221159 7211222	Plug 2 pole Socket 6 pole	
MP1	3302352	Screen					

PCB37, 8005314 Lid motor

PE1Δ- PE2Δ	8330235	**257**	Optocoupler				
P76	7211075	Socket 6 pole					

PCB41, 8001872 VAM 1250

IC1Δ	8342559	**151**	LB1619M	IC11Δ	8343709		87C528 OTP
IC4Δ	8341024	**150**	4066	IC12Δ	8342941	**147**	SAA7376GP
IC5Δ-	8341098	**138**	LM358	IC14Δ	8343083	**149**	TDA7072AT
IC7Δ				IC15Δ	8342495	**138**	TDA7073A
IC10Δ	8341612	**138**	TL7705	IC16Δ	8343365	**152**	PIC12C508
TR1	8321184	**75**	MJD122	TR12	8321196	**136**	PUMZ1
TR2-	8320752	**51**	BC817-40	TR544	8321198	**136**	PUMX1
TR3				TR546	8321198	**136**	PUMX1
TR5	8321196	**136**	PUMZ1				
D1	8330422	**269**	IR emitter	D5	8300482	**250**	LL4148
D3	8301035	**267**	BAV99W				
PE1	8330453		Photo transistor				

R2	5021490	28Ω 1% 1/4W	R46	5012239	39KΩ 1% 1/8W
R4⚠-	5024001	2.2Ω	R61⚠	5024001	2.2Ω
R5⚠			R63⚠	5024001	2.2Ω
R15⚠	5024001	2.2Ω	R68⚠	5024000	1Ω
R21	5012332	4.7KΩ 1% 1/8W	R78⚠	5024001	2.2Ω
R22	5012267	1.2MΩ 5% 1/8W	R83⚠	5024000	1Ω
R27	5012366	20KΩ 1% 1/8W	R86-	5013250	12KΩ 1% 1/16W
R28	5012240	100KΩ 1% 1/8W	R87		
R30	5012154	1KΩ 1% 1/4W	R95-	5013250	12KΩ 1% 1/16W
R31-	5012237	6.8KΩ 1% 1/8W	R96		
R32			R97	5013151	680Ω 5% 1/10W
R33	5011194	220Ω 5% 1/4W	R101	5013003	47Ω 1% 1/16W
R34-	5012239	39KΩ 1% 1/8W	R103-	5013232	390Ω 1% 1/16W
R35			R104		
R36	5012237	6.8KΩ 1% 1/8W	R106-	5013305	22KΩ 1% 1/10W
R40	5012331	10KΩ 1% 1/8W	R107		
R41	5011928	47Ω 5% 1/8W	R108	5013239	1.5KΩ 1% 1/16W
R42	5024000	1Ω	R109-	5013041	432Ω 1% 1/16W
R44	5012239	39KΩ 1% 1/8W	R110		

⚠ *symbol of safety component, see page 2.1*

Δ *indicates that static electricity may destroy the component*

R111-R112	5013242	2.7KΩ 1% 1/16W	R113 R116	5013063 5013124	10KΩ 1% 1/16W 1.0KΩ 1% 1/16W
C1	4201359	3.3µF 20% 16V	C49-C50	4011135	100nF -20+80% 16V
C2	4011135	100nF -20+80% 16V			
C4	4011135	100nF -20+80% 16V	C51	4011135	100nF -20+80% 16V
C5	4201359	3.3µF 20% 16V	C52	4000424	1nF 5% 50V
C6	4011135	100nF -20+80% 16V	C53	4011135	100nF -20+80% 16V
C7	4010315	22nF 10% 25V	C54	4000412	100pF 5% 50V
C8	4011135	100nF -20+80% 16V	C55	4011135	100nF -20+80% 16V
C11	4011135	100nF -20+80% 16V	C56	4201349	tantal 47µF 20% 10V
C12-C15	4001139	220pF 5% 50V	C57-C58	4011135	100nF -20+80% 16V
C16	4010273	47nF -20+80% 50V	C59	4201359	3.3µF 20% 16V
C17	4010261	1.5nF 10% 50V	C60	4001131	47pF 5% 50V
C18	4000421	560pF 5% 50V	C61	4201362	2.2µF 10% 10
C19-C20	4001139	220pF 5% 50V	C62	4011135	100nF -20+80% 16V
			C63	4201348	1µF 10% 16V
C21	4011135	100nF -20+80% 16V	C64	4011122	10nF 10% 50V
C22	4010274	100nF -20+80% 2V	C65	4001141	330pF 5% 50V
C23	4000412	100pF 5% 50V	C66	4011135	100nF -20+80% 16V
C24	4011126	22nF 10% 25V	C67-C68	4001139	220pF 5% 50V
C25-C26	4011135	100nF -20+80% 16V			
			C69	4201349	47µF 20% 10V
C27	4011135	100nF -20+80% 16V	C70-C71	4011135	100nF -20+80% 16V
C28	4000442	2.2nF 5% 50V			
C29	4001131	47pF 5% 50V	C72	4011123	12nF 10% 25V
C30	4010282	470nF -20+80% 25V	C73	4001141	330pF 5% 50V
C31	4201359	3.3µF 20% 16V	C74	4001139	220pF 5% 50V
C32	4010282	470nF -20+80% 25V	C75-C76	4011135	100nF -20+80% 16V
C33	4011122	10nF 10% 50V			
C34	4000442	2.2nF 5% 50V	C77	4000442	2.2nF 5% 50V
C35	4011135	100nF -20+80% 16V	C78	4011128	33nF 10% 25V
C36	4201359	3.3µF 20% 16V	C79	4201349	47µF 20% 10V
C37-C39	4011135	100nF -20+80% 16V	C81	4011130	47nF 10% 16V
			C82	4011135	100nF -20+80% 16V
C41	4201359	3.3µF 20% 16V	C83	4001141	330pF 5% 50V
C42	4011135	100nF -20+80% 16V	C84	4001138	180pF 5% 50V
C43	4000424	1nF 5% 50V	C85	4201349	47µF 20% 10V
C44-C45	4000400	10pF 5% 50V	C86	4011126	22nF 10% 25V
			C535	4011135	100nF -20+80% 16V
C46	4010237	1nF 10% 50V	C540	4000400	10pF 5% 50V
C47	4011135	100nF -20+80% 16V	C541-C543	4011135	100nF -20+80% 16V
C48	4201359	3.3µF 20% 16V			
L1	8021135	Coil 10µH	L2	8020822	Coil 3.3µH 5%
T1	8021159	Transformer 796KHz			
X1	8090157	Crystal 33.868MHz	X2	8030246	Crystal 12MHz
P42	7210895	Socket 16 pole	P99	7211146	Socket 11 pole
P45	7221157	Plug 6/6 pole			
P46-P47	7211148	Socket 12 pole			

PCB95, 8420254 CD mechanism
VAM 1250 (Turntable black)
From serial no. 15143261

WARNING! Static electricity may destroy the component

Mechanical part numbers

90M1	8400214	Gear motor
90M2	8400213	Sledge motor, complete w/wire
90T1	8013551	Transformer 230V f/type 2571, 2572, 2577, 2580
	8013549	Transformer 120V f/type 2573, 2576
	8013548	Transformer 100V f/type 2574
	8013550	Transformer 240V f/type 2575
90P1	6270671	FM socket
90P2	6276977	AM socket
90P3	7219095	Socket f/digital output
91M1	8400212	Clamper motor

Standard resistors

Resistors 5% 1/2 W

	x1	x10	x100	x1k	x10k	x100k	x1M	x10M
1.0		5011000	5011013	5011028	5011044	5010313	5011069	5011083
1.2	5011406	5011001	5011014	5011030	5011045	5011058	5010421	
1.5	5010727	5011002	5011015	5011031	5011046	5011059	5011071	
1.8	5010857	5010787	5011016	5011033			5011072	
2.2	5011335	5010708	5010815	5011034	5011048	5011061	5011074	
2.7	5011612	5010803	5011018	5010055	5011049	5011062	5011075	
3.3	5012147	5011007	5011019	5011037		5011063	5010381	
3.9		5010782	5011021	5010700	5011051		5010392	
4.7	5010765	5011009	5011022	5010035		5011065	5011078	
5.6		5011010	5011023	5011041		5011066		
6.8	5010874	5011011	5011024	5011042	5010810	5011067	5011080	
8.2		5011012	5011026	5011043	5010038	5011068	5011081	

Resistors 5% 1/4 W

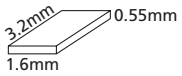
	x1	x10	x100	x1k	x10k	x100k	x1M	x10M
1.0	5010592	5010506	5010065	5010040	5010059	5010049	5010054	5010638
1.2		5010595	5010128	5010153	5010046	5010047	5010665	
1.5	5011348	5010468	5010057	5010247	5010053	5010063	5010093	
1.8		5010822	5010362	5010066	5010135	5010072	5010791	
2.2	5010682	5010448	5010092	5010064	5010079	5010120	5010245	
2.7	5010925	5010403	5010000	5010298	5010141	5010083	5010431	
3.3	5011860	5010253	5010044	5010076	5010075	5010117	5010848	
3.9	5011377	5010622	5010070	5010069	5010060	5010073	5010714	
4.7	5010888	5010411	5010058	5010048	5010045	5010077	5011513	
5.6	5010706	5010151	5010067	5010041	5010061	5010071	5010658	
6.8	5010874	5010039	5010144	5010052	5010062	5010074		
8.2	5010880	5010056	5010068	5010154	5010091	5010505		

Resistors 5% 1/8 W

	x1	x10	x100	x1k	x10k	x100k	x1M	x10M
1.0		5011464	5011357	5010816	5010935	5011440	5011459	5020875
1.2		5011351	5011084	5011442	5011338	5011341	5011175	
1.5		5011463	5011443	5011178	5011364	5011398	5011460	
1.8			5011350	5011361	5011344	5011468		
2.2	5011032	5011376	5010886	5011353	5010833	5011369	5011342	
2.7		5011471	5011355	5011362	5011366	5011370	5011478	
3.3		5011519	5011337	5010827	5011346	5011371	5011462	
3.9		5011438	5011883	5011157	5011457	5011372	5020876	
4.7		5011038	5011441	5011363	5010937	5011343	5011611	
5.6		5011412	5011358	5010885	5011166	5011340		
6.8		5011356	5011336	5010839	5011367	5011458		
8.2		5011466	5011354	5011339	5011368	5011373		

Resistors SMD 2% 1/8 W
SMD 5% 1/8 W

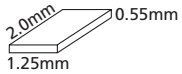
Glue dots, approx. 200, part no. 3181932



	5%	2%	2%	2%	2%	2%	5%	2%
	x1	x10	x100	x1k	x10k	x100k	x1M	x10M
1.0	5011623	5011647	5011218	5011227	5011241	5011256	5011267	5011730
1.1	5011624	5011648	5011669	5011681	5011689	5011694	5011707	
1.2	5011625	5011649	5011219	5011682	5011490	5011257	5011708	
1.3	5011626	5011650	5011670	5011683	5011242	5011258	5011709	
1.5	5011627	5011651	5011220	5011228	5011243	5011259	5011710	
1.6	5011628	5011652	5011671	5011684	5011690	5011695	5011711	
1.8	5011629	5011653	5011672	5011229	5011244	5011260	5011712	
2.0	5011630	5011654	5011673	5011685	5011691	5011696	5011713	
2.2	5011216	5011655	5011674	5011230	5011245	5011261	5011714	
2.4	5011634	5011656	5011675	5011686	5011246	5011697	5011715	
2.7	5011635	5011657	5011497	5011231	5011247	5011262	5011716	
3.0	5011731	5011658	5011499	5011500	5011692	5011698	5011717	
3.3	5011217	5011659	5011676	5011232	5011248	5011263	5011718	
3.6	5011636	5011660	5011677	5011687	5011249	5011264	5011719	
3.9	5011637	5011661	5011221	5011233	5011491	5011699	5011720	
4.3	5011638	5011662	5011498	5011688	5011492	5011700	5011721	
4.7	5011639	5011269	5011222	5011234	5011250	5011265	5011722	
5.1	5011640	5011663	5011678	5011235	5011493	5011701	5011723	
5.6	5011641	5011664	5011223	5011236	5011251	5011702	5011724	
6.2	5011642	5011665	5011224	5011237	5011693	5011703	5011725	
6.8	5011643	5011666	5011225	5011238	5011252	5011704	5011726	
7.5	5011644	5011667	5011679	5011239	5011253	5011705	5011727	
8.2	5011645	5011270	5011226	5011240	5011254	5011266	5011728	
9.1	5011646	5011668	5011680	5011489	5011255	5011706	5011729	

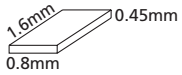
Resistors SMD 5% 1/10W

Glue dots, approx. 200, part no. 3181932



	x1	x10	x100	x1K	x10K	x100K	x1M	x10M
0.0	6000072							
1.0		5011920	5011932	5011944	5011956	5011968	5011980	5012275
1.2	5012326	5011921	5011933	5011945	5011957	5011969	5012267	
1.5	5012379	5011922	5011934	5011946	5011958	5011970	5012268	
1.8	5012380	5011923	5011935	5011947	5011959	5011971	5011989	
2.2		5011924	5011936	5011948	5011960	5011972	5012220	
2.7		5011925	5011937	5011949	5011961	5011973	5012269	
3.3		5011926	5011938	5011950	5011962	5011974	5012261	
3.9		5011927	5011939	5011951	5011963	5011975	5012270	
4.7	5012472	5011928	5011940	5011952	5011964	5011976	5012271	
5.6		5011929	5011941	5011953	5011965	5011977	5012272	
6.8		5011930	5011942	5011954	5011966	5011978	5012273	
8.2		5011931	5011943	5011955	5011967	5011979	5012274	

Resistors SMD 5% 1/16W



	x1	x10	x100	x1K	x10K	x100K	x1M	x10M
1.0	5013201	5013213	5013225	5013237	5013249	5013261	5013273	5013285
1.2	5013202	5013214	5013226	5013238	5013250	5013262	5013274	
1.5	5013203	5013215	5013227	5013239		5013263		
1.8	5013204	5013216	5013228	5013240		5013264	5013276	
2.2	5013205	5013217	5013229	5013241	5013253	5013265	5013277	
2.7	5013206	5013218		5013242	5013254	5013266	5013278	
3.3	5013207		5013231		5013255	5013267	5013279	
3.9	5013208	5013220		5013244		5013268	5013280	
4.7	5013209	5013221	5013233	5013245	5013257	5013269	5013281	
5.6	5013210	5013222	5013234	5013246	5013258	5013270	5013282	
6.8	5013211	5013223	5013235	5013247	5013259	5013271	5013283	
8.2	5013212	5013224	5013236	5013135	5013260	5013272	5013284	

List of mechanical parts

Top

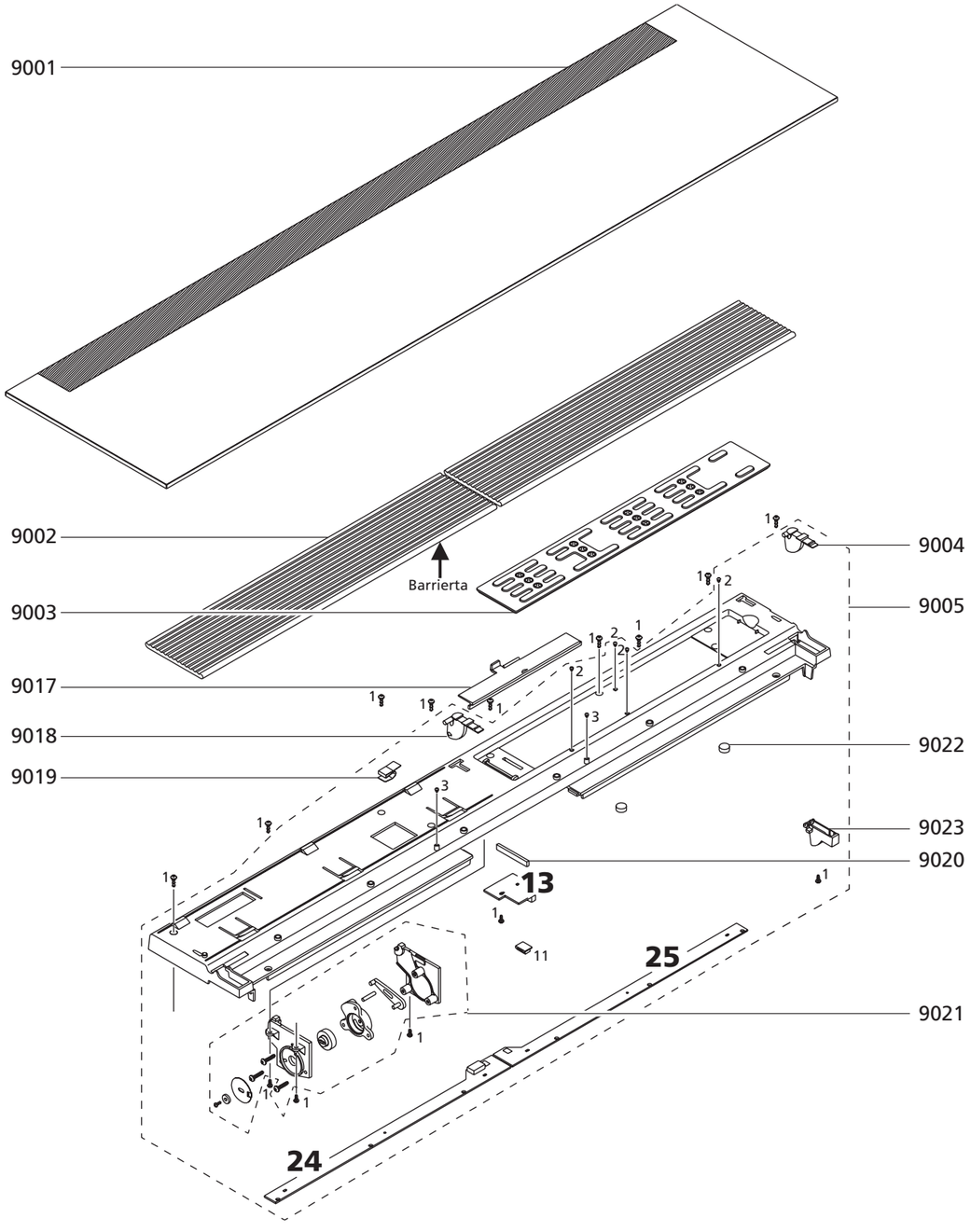
13Module	8005313	PCB13, Secondary Keyboard
24Module	8005304	PCB24, Light indication, left
25Module	8005305	PCB25, Light indication, right
27Module	8005377	PCB27, Safety TX
28Module	8005303	PCB28, Safety RX
9001	3162785	Glass lid
9002	3160059	Cover
9003	3169064	Secondary keyboard
	3169297	Secondary keyboard – new colour from serial no. _____
9004	3030123	Hinge f/cover, right
9005	3114481	Chassis top plate, complete (without switch)
	3114488	Chassis top plate, complete (without switch) – new colour from serial no. _____
9006	3458925	Top plate, complete
	3459273	Top plate, complete – new colour from serial no. _____
9007	3375163	Lens
9008	2622510	Holder f/lens f/5 mm diode
9009	3151325	Disc holder, front
	3151724	Disc holder, front – new colour from serial no. _____
9010	3322176	Window, right
9011	2810283	Spring f/disc holder, rear
9012	2810282	Spring f/disc holder, front
9013	3031528	Holder f/springs, rear
9014	3031527	Holder f/springs, front
9015	3947582	Tape
9016	2569447	Guide rail, front
9017	3160063	Cover for chassis top plate
	3160266	Cover for chassis top plate – new colour from serial no. _____
9018	3030124	Hinge f/cover, left
9019	2816288	Spring, chassis connection
9020	3333021	Contact rubber
9021	3114445	Damper f/cover
9022	3356064	Magnet
9023	3031533	Holder f/hinge
9024	3151324	Disc holder rear
	3151723	Disc holder rear – new colour from serial no. _____
9025	3322175	Window, left
9026	3947581	Tape
9027	2569448	Guide rail, rear
	3984049	Barrierta

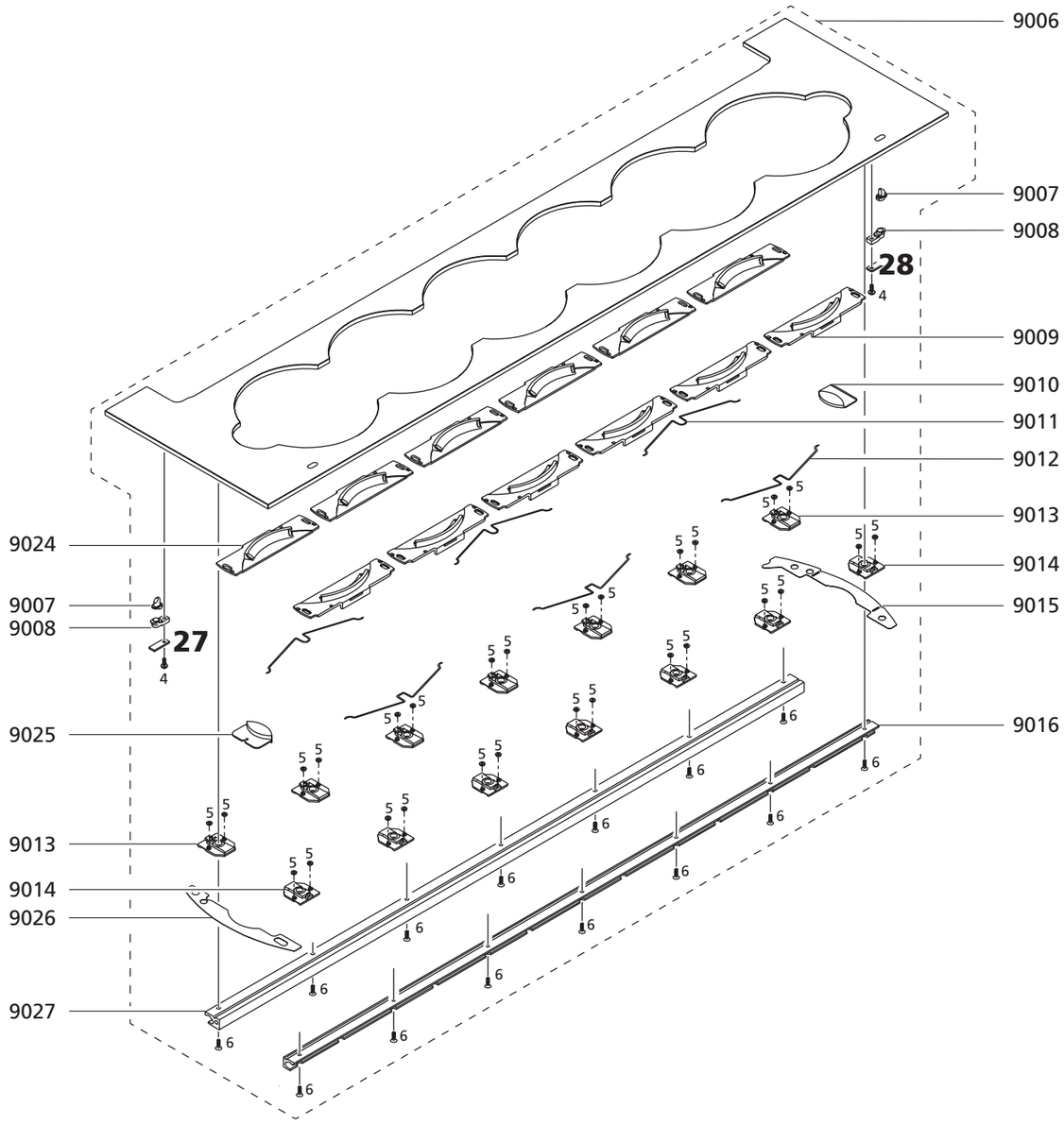
Survey of screws etc.

1	2013137	Screw 3 x 10mm
2	3103328	Damper
3	3341104	Damper
4	2038111	Screw 3 x 8mm
5	2732129	O-ring
6	2054005	Screw 3 x 8mm
11	2515059	Holder f/wire

4.2 List of mechanical parts 4.2

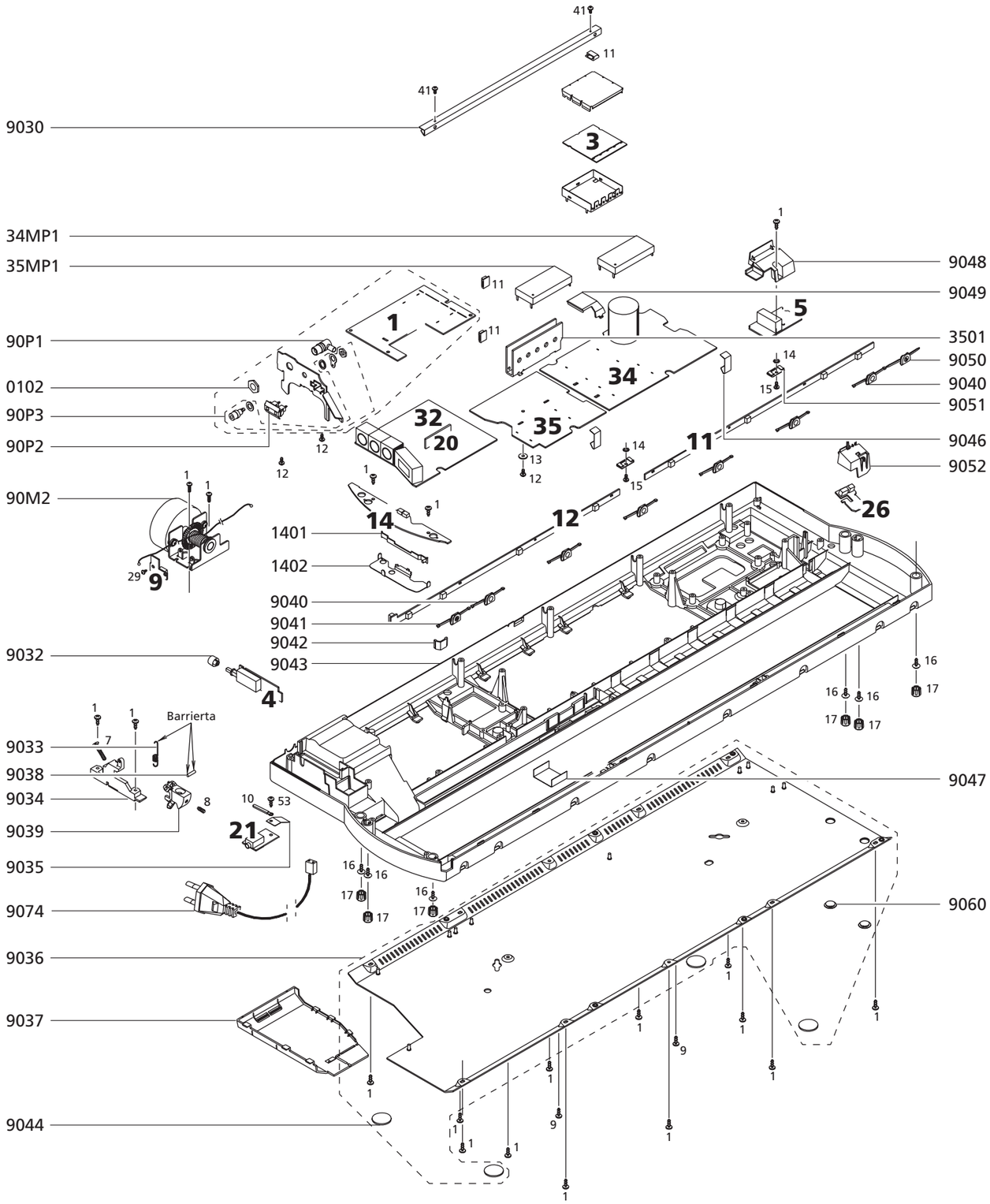
Top

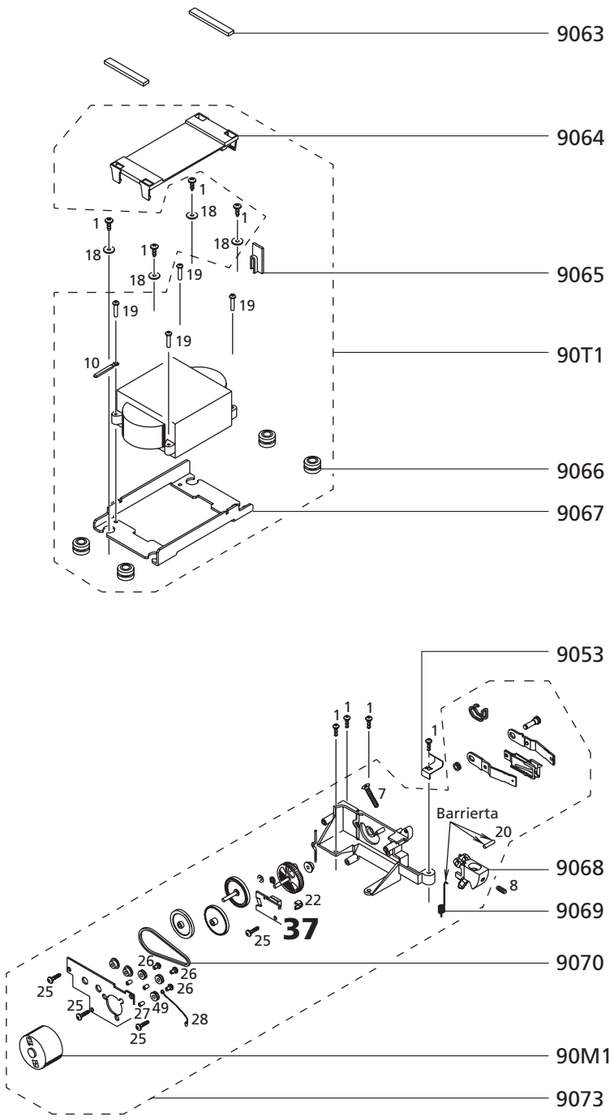




4.3 List of mechanical parts

Chassis





4.4 List of mechanical parts 4.4

Chassis

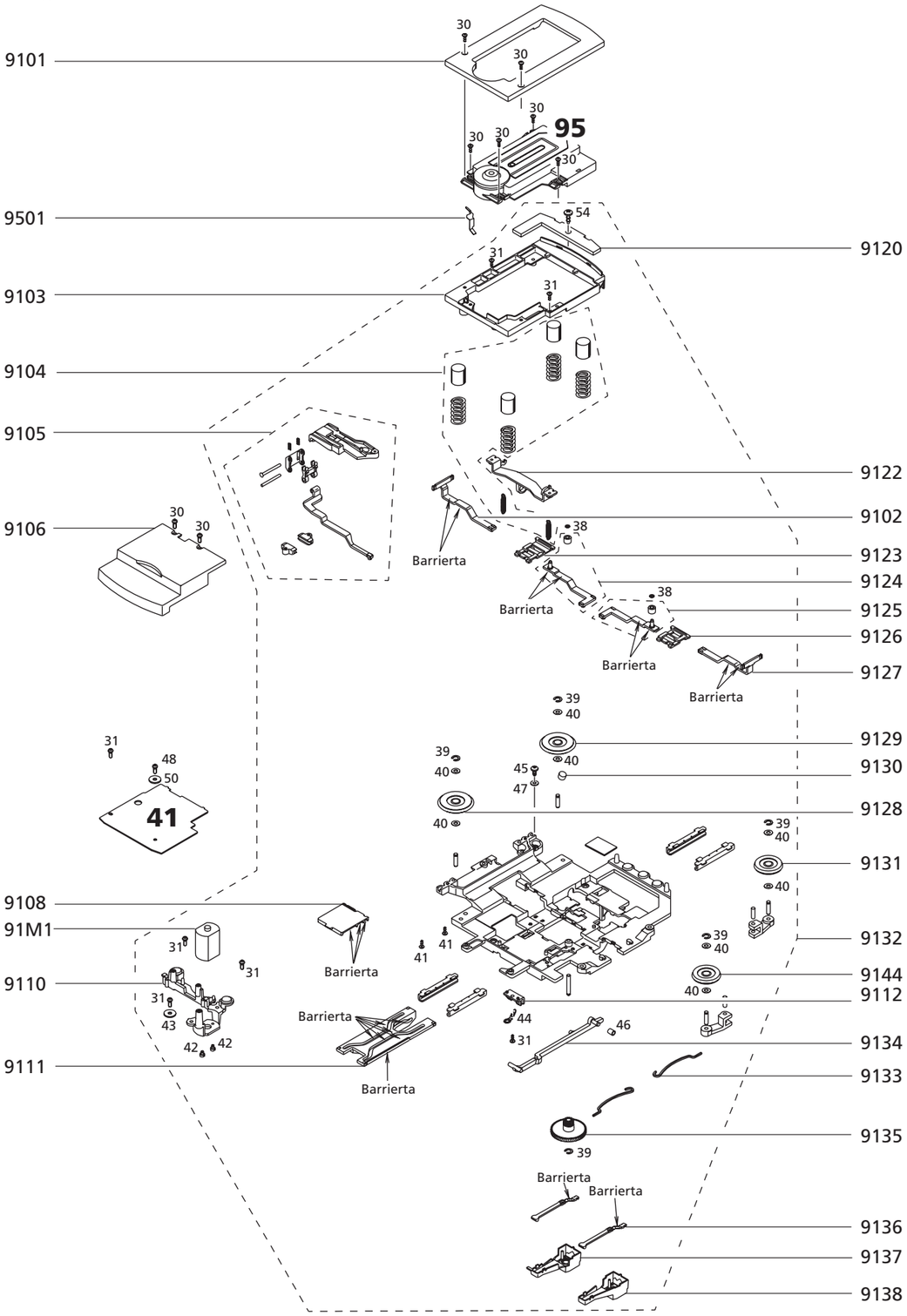
01Module	8000462	PCB1, FM/AM-RDS f/type 2571, 2572, 2573, 2575, 2576, 2577, 2580
	8000535	PCB1, FM/AM-RDS f/type 2574
0102	2380170	Nut f/FM socket
If PCB88 are mounted instead of PCB01 see service manual BeoSound 9000 -3538887/3538888		
03Module	8000513	PCB3, Main microcomputer
04Module	8000463	PCB4, Mains filter without mains switch
05Module	8005661	PCB5, Mains relay f/type 2571, 2572, 2574, 2575, 2577, 2580
	8005664	PCB5, Mains relay f/type 2573, 2576
09Module	8005312	PCB9, Sledge Position
11Module	8005295	PCB11, Main Keyboard, right
12Module	8005296	PCB12, Main Keyboard, left
14Module	8005299	PCB14, IR Reciever – Plasma from serial no. 14758303
1401	3302560	Shield, plastic
1402	3302555	Shield
20Module	8001824	PCB20, ML Interface
21Module	8005301	PCB21, Headphone
26Module	8005315	PCB26, End stop detector
32Module	8005399	PCB32, Input/output Select and sound adjustment
34Module	8000512	PCB34, Power supply f/type 2571, 2572, 2574, 2575, 2577, 2580
	8000536	PCB34, Power supply f/type 2573, 2576
34MP1	3302352	Shield
35Module	8006777	PCB35, Motor control
3501	3358312	Heat sink
35MP1	3302352	Shield
37Module	8005314	PCB37, Lid motor
9030	3300149	Shield
9032	2776517	Button, on/off
9033	2810292	Spring f/glass lid, left
9034	3031338	Fitting f/hinge, glass lid
9035	2815045	Spring, chassis connection
9036	3454845	Rear panel
	3454983	Rear panel – new colour from serial no. _____
9037	3162436	Cover
	3162822	Cover – new colour from serial no. _____
9038	2830161	Axle
9039	3131407	Hinge f/glass lid, left
9040	2776487	Button, select
	2776724	Button, select – new colour from serial no. _____
9041	2776493	Button, stand by
	2776725	Button, stand by – new colour from serial no. _____
9042	3322158	IR window
9043	3114453	Chassis
	3114486	Chassis – new colour from serial no. _____
9044	3103326	Foot
9046	2816290	Spring, chassis connection
9047	3302589	Shield f/ribbon cables
9048	3160058	Cover f/PCB5
9049	3302561	Cover f/ribbon cables
9050	2776494	Button, load
	2776726	Button, load – new colour from serial no. _____
9051	3151322	Holder f/screw
9052	3162505	Cover f/PCB26
9053	2815049	Spring, chassis connection
9060	3341088	Plastic plug
9063	3947350	Foam tape
9064	3302568	Cover f/transformer
9065	3302562	Shield f/wire
9066	2938277	Bush
9067	3124131	Fittings
9068	3131384	Hinge f/glass lid, right
9069	2810291	Spring f/glass lid, right
9070	2732120	Rubber belt
9073	2755051	Gearbox, complete
9074	6100273	Mains cable f/ type 2571, 2580
	6100329	Mains cable f/type 2572
	6100307	Mains cable f/type 2573, 2576
	6100331	Mains cable f/type 2574
	6100332	Mains cable f/type 2575
	6100386	Mains cable f/type 2577
90M1	8400214	Gear motor
90M2	8400213	Sledge motor complete w/wire
90P1	6270671	FM socket
90P2	6276977	AM socket
90P3	7219095	Socket f/digital output
90T1	8013551	Transformer 230V AC f/type 2571, 2572, 2577, 2580
	8013549	Transformer 120V AC f/type 2573, 2576
	8013548	Transformer 100V AC f/type 2574
	8013550	Transformer 240V AC f/type 2575
	3984049	Barrierta

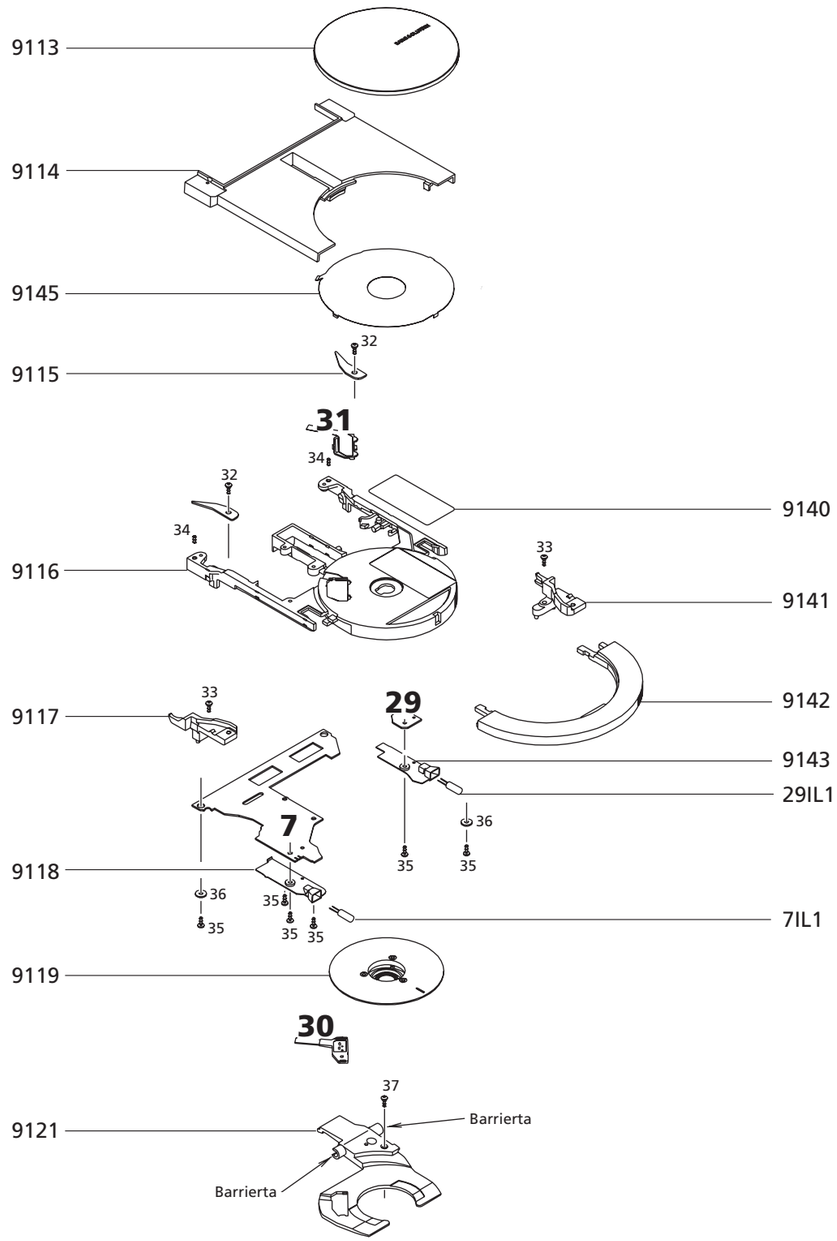
Survey of screws etc.

1	2013137	Screw 3 x 10mm
7	2058018	Screw 4 x 25mm
8	2072115	Pointed screw 4 x 8mm
9	2011050	Screw 3 x 8mm
10	7530119	Solder tag
11	2515059	Holder f/wire
12	2038137	Screw 3 x 6mm
13	2625002	Washer
14	2390106	Lock washer
15	2058006	Screw 3 x 5mm
16	2058007	Screw 3 x 10mm
17	3341110	Plug
18	2622490	Washer
19	2039064	Screw 3 x 12mm
20	2830161	Axle 3 x 13.8mm
22	3151388	Holder f/optocoupler
25	2054012	Screw 3 x 10mm
26	2036061	Screw 2.6 x 6.5mm
27	2930074	Bush 2.6 x 3.2 x 4.8mm
28	6032961	GND wire
29	2038117	Screw 3 x 4mm
41	2011043	Screw 2.2 x 6mm
49	2938306	Bushing
53	2052009	Screw 3 x 8mm

4.5 List of mechanical parts

Sledge





4.6 List of mechanical parts 4.6

Sledge

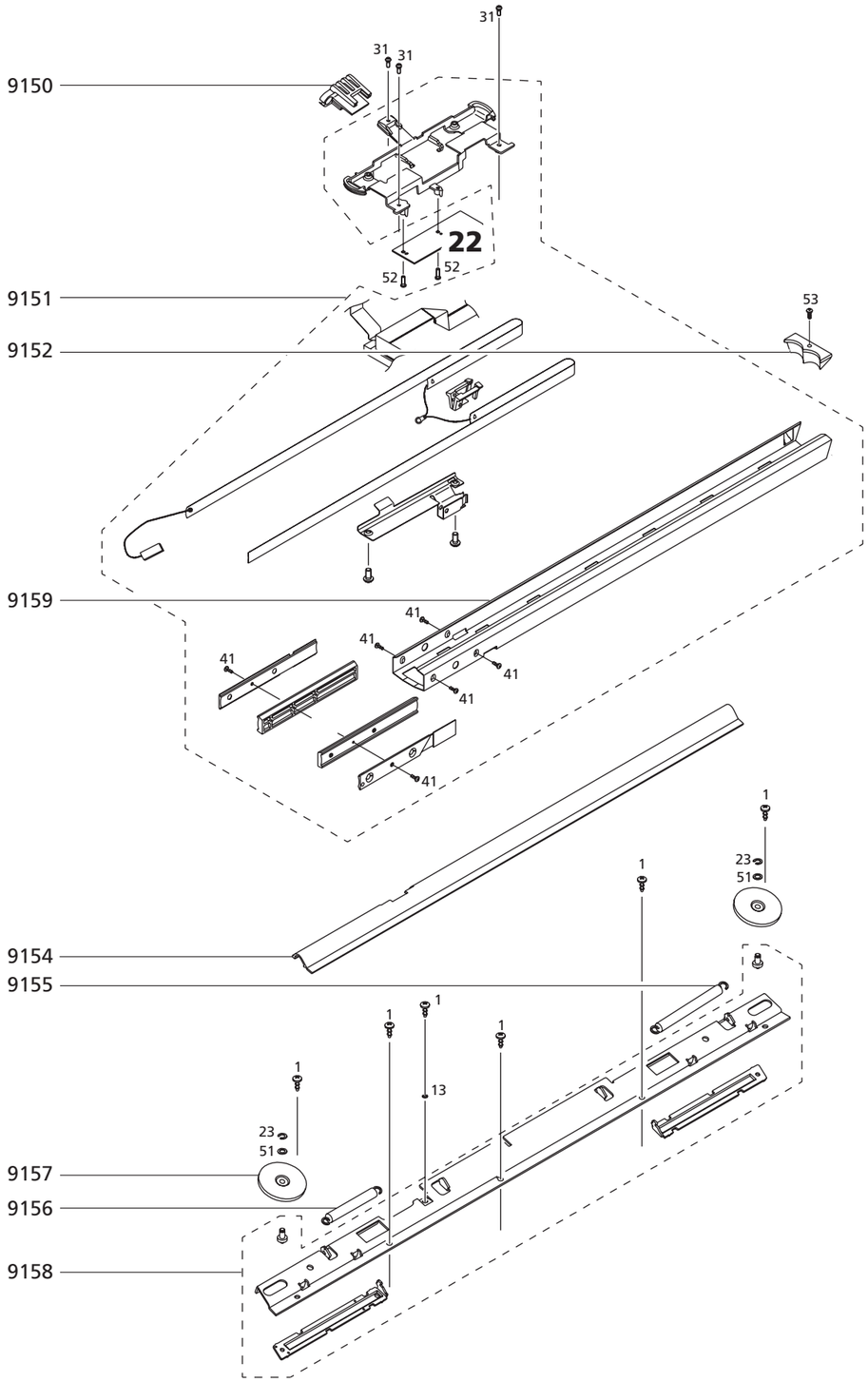
07Module	8005364	PCB7, Display
7IL1	8230125	Bulb, 190mA 6.3V
29Module	8005309	PCB29, Lamp
29IL1	8230125	Bulb, 190mA 6.3V
30Module	8001865	PCB30, IR transmitter, tacho clamper
31Module	8001866	PCB31, IR Receiver, tacho clamper
41Module	8001872	PCB41, CD VAM 1250 from serial no. 15143261
95Modul	8420254	CD mechanism VAM 1250 (Turntable black) from serial no. 15143261 WARNING! Static electricity may destroy the component
9501	2815050	Spring, chassis connection
9101	3459272	Cover f/CD mechanism – VAM 1250 from serial no. 15143261
9102	2854206	Arm f/release of CD
9103	3114427	Chassis f/CD mechanism
9104	2810293	Springs f/CD mechanism complete
9105	2854204	Clamper arm
9106	3459011	Cover f/CD PCB
9108	3014128	Holder
9110	3151333	Holder f/springs
9111	3014134	Guide f/clamping
9112	3031534	Holder f/rocker arm
9113	3162462	Cover f/CD clamper
9114	3162477	Top plate for CD mechanism
9115	2810281	Flat spring
9116	3114431	Clamper
9117	2570088	Clamper holder, left
9118	3358331	Heat sink, left
9119	3151684	Holder, clamper
9120	3342058	Counterbalance
9121	2854207	Clamper arm
9122	2854198	Arm f/pull springs
9123	3014112	Holder f/arms, rear
9124	2854203	Arm f/pawl, rear
9125	2854202	Arm f/pawl, front
9126	3014111	Holder f/arms, front
9127	2854206	Arm f/release of CD
9128	3032030	Sledge wheel, rear
9129	3032030	Sledge wheel, rear
9130	3356065	Magnet f/endstop detector
9131	3032031	Sledge wheel, front
9132	3114447	Sledge complete
9133	2810280	Spring f/sledge wheel
9134	2854196	Rocker arm
9135	2700105	Gearwheel
9136	2854205	Adjustment arm f/pull spring
9137	3131399	House f/adjustment arm, rear
9138	3131401	House f/adjustment arm, front
9140	3181048	Lable, laser
9141	2570084	Clamper holder, right
9142	3370164	Lens f/light
9143	3358332	Heat sink, right
9144	3032031	Sledge wheel, front
9145	3302594	Cover
91M1	8400212	Clamper motor
	3984049	Barrierta

Survey of screws etc.

30	2052007	Screw 2.5 x 6mm
31	2058013	Screw 2.5 x 6mm
32	2058011	Screw 3 x 5mm
33	2058015	Screw 2.5 x 10mm
34	2072116	Pointed screw 3 x 4mm
35	2054003	Screw 2.2 x 4.5mm
36	2625044	Washer
37	2052004	Screw 2.2 x 5mm
38	2622110	Washer
39	2390001	Washer
40	2620020	Washer
41	2011043	Screw 2.2 x 6mm
42	2058008	Screw 2 x 2mm
43	2622041	Washer
44	7530087	Solder tag
45	2036036	Screw 2.5 x 4mm
46	3333022	Damper f/rocker arm
47	2622379	Washer
48	2036082	Screw 2.5 x 8mm
50	2625044	Washer
54	2052009	Screw 3 x 8mm

4.7 List of mechanical parts

Guide f/wire and ribbon cables



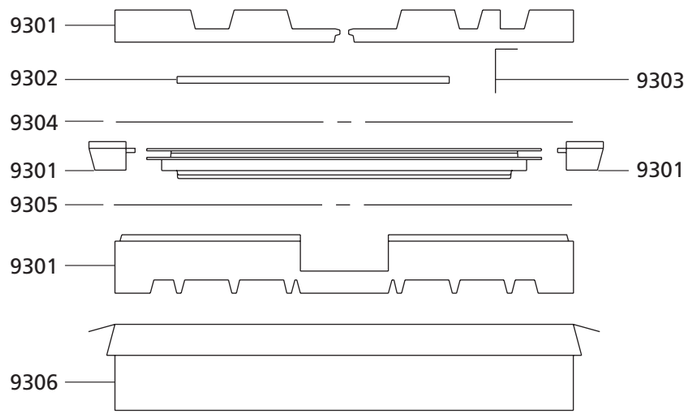
Guide f/wire and ribbon cables

22Module	8000514	PCB22, Clamper position	
9150	2510178	Holder	
9151	3015197	Ribbon cables complete with guide	
9152	3151463	Holder	
9154	2560284	Cover	
9155	2810277	Spring f/wire, right	
9156	2810278	Spring f/wire, left	
9157	3032029	Wheel f/wire	
9158	3031535	Fittings f/wire	
9159	3014098	Guide f/ribbon cables	

Survey of screws etc.

1	2013137	Screw 3 x 10mm
13	2625002	Washer
23	2390002	Washer
31	2058013	Screw 2.5 x 6mm
41	2011043	Screw 2.2 x 6mm
51	2622499	Washer
52	2036064	Screw 2.5 x 5mm
53	2013150	Screw 2.5 x 8mm

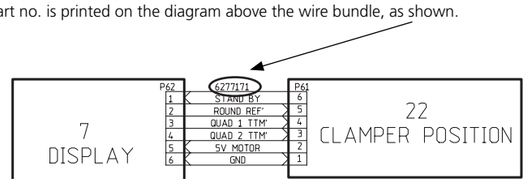
Packing



9301	3397920	Foam packing, set
9302	3397983	Insert f/cover
9303	3392468	Insert f/clamper
9304	3946038	Foil 1 x 1m
9305	3946038	Foil 1 x 1m
9306	3392228	Outer carton
	2777037	Holder f/handle
	2777038	Handle

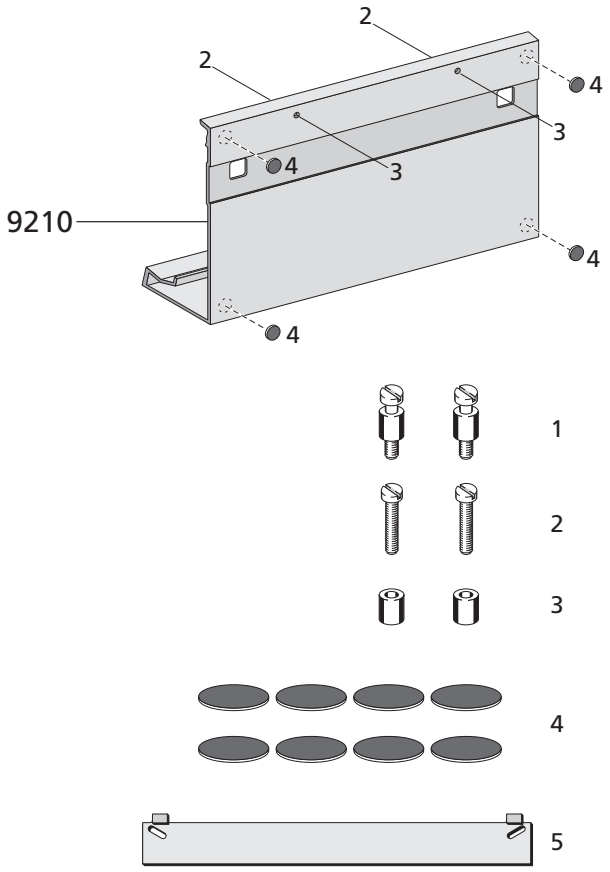
Wire bundles

See wiring diagram page 2.3.
The part no. is printed on the diagram above the wire bundle, as shown.



Accessories	8720047	AM loop antenna
	8720048	FM antenna
Guide	3505745	Danish
	3505746	Swedish
	3505747	Finnish
	3505748	English, EU
	3505749	German
	3505750	Dutch
	3505751	French
	3505752	Italian
	3505753	Spanish
	3505754	Portuguese
	3505755	Greek
	3505756	Brazil
	3505757	Polish
	3505758	Russian
	3505759	Hebrew
	3505760	Japanese
	3505761	Taiwanese
	3505762	Korean
	3505763	Norwegian
Reference book	3508389	Danish
	3508390	Swedish
	3508391	Finnish
	3508392	English, EU
	3508393	German
	3508394	Dutch
	3508395	French
	3508396	Italian
	3508397	Spanish
	3508398	Portuguese
	3508399	Greek
	3508400	Brazil
	3508401	Polish
	3508402	Russian
	3508403	Hebrew
	3508404	Japanese
	3508405	Taiwanese
	3508406	Korean
	3508407	Norwegian
Product Informations	3507000	English
	3507001	Danish
	3507002	German
	3507003	French
Circuit descriptions	3540273	English
	3540274	Danish
	3540275	German
	3540276	French
	3540277	Dutch

Bracket 2053



9210	2569423	Bracket

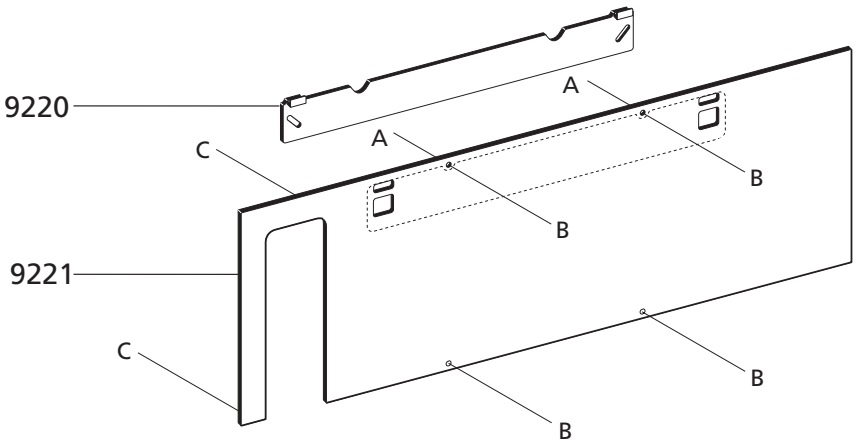
Survey of screws etc.

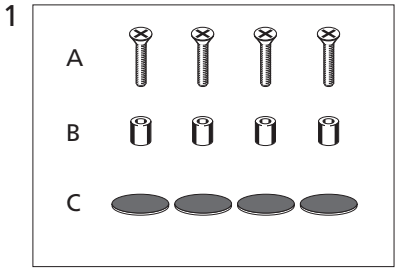
1	2930133	Adjustment bushing
2	2042211	Screw 4 x 12mm
3	2930132	Bushing
4	3103326	Foot, 1 piece
5	2569438	Wall profile

Parts not shown

	3103372	Foot, set incl. screws
	3040037	Red adjustment key
	3390455	Bag w/parts
	3392440	Outer carton
	3397970	Foam packing
	3502941	Setting-up guide
	3504533	Setting-up guide

Wall Bracket horizontal 2054





9220	2569470	Wall profile
9221	3452692	Rear plate

Survey of screws etc.

1	3390533	Bag w/parts

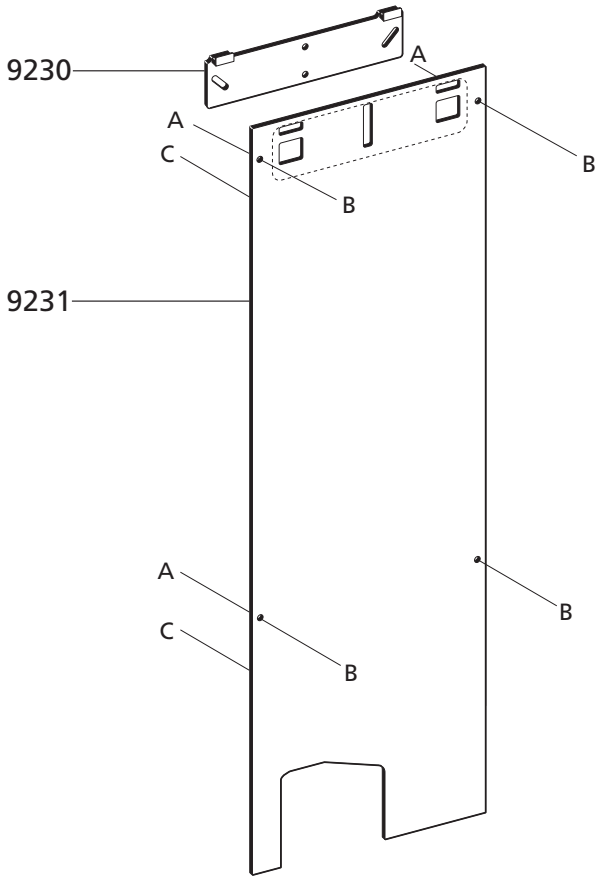
Parts not shown

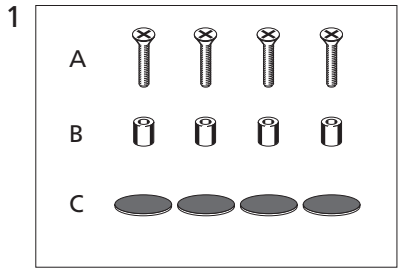
	3392518	Packing, complete
	3502942	Setting-up guide

Cable cover 2062

	2569440	Profile
	3031545	Bracket
	3392517	Packing, complete

Wall Bracket Vertical 2063





9230	2569471	Wall profile
9231	3452693	Rear plate

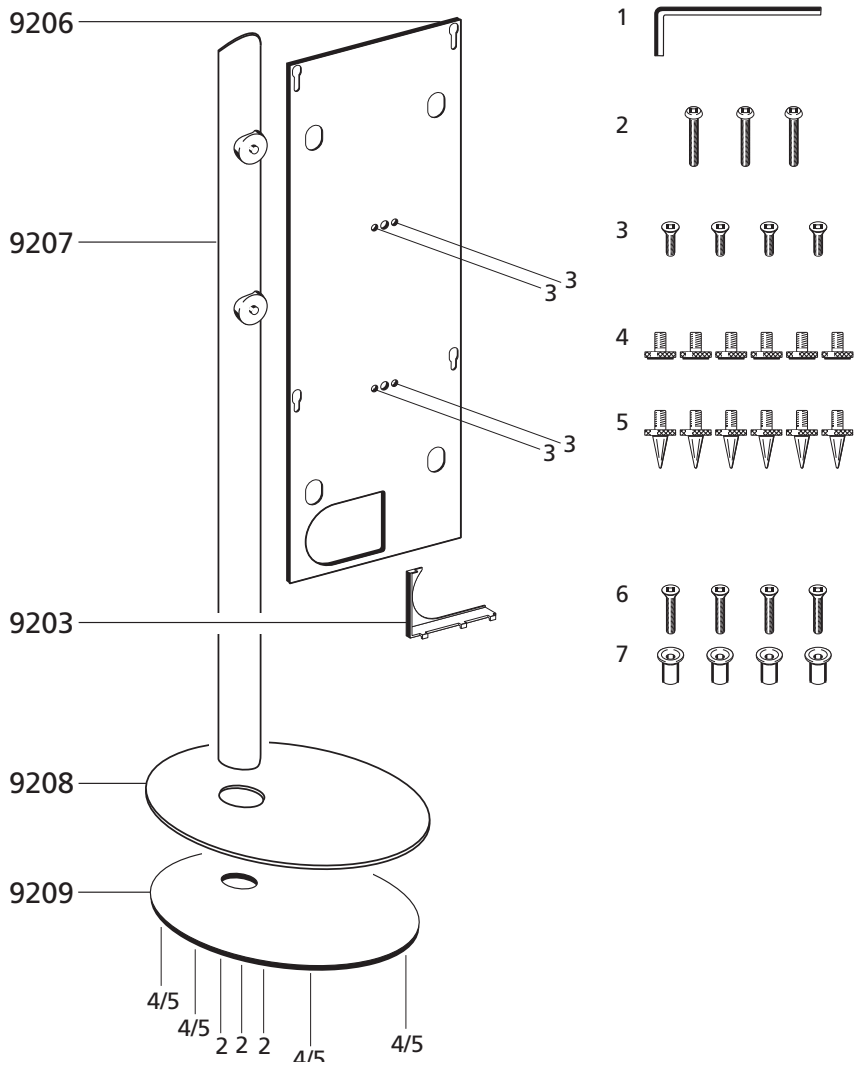
Survey of screws etc.

1	3390533	Bag w/parts

Parts not shown

	3392518	Packing, complete
	3502984	Setting-up guide

Stand 2065
Adjustable in two heights



9203	3162463	Cover
	3162823	Cover – new colour from serial no. _____
9206	3452701	Back plate
9207	2569601	Tube, high 118,6 cm
9208	3162731	Cover plate, aluminium
9209	2752070	Iron foot

Survey of screws etc.

1	3040023	Allen key
2	2058009	Allen screw 4 x 25mm
3	2058010	Screw 4 x 12mm
4	3103392	Foot, "Soft"
5	3103390	Foot, "Spike" adjustable
6	2058012	Screw 4 x 20mm
7	2930135	Bushing

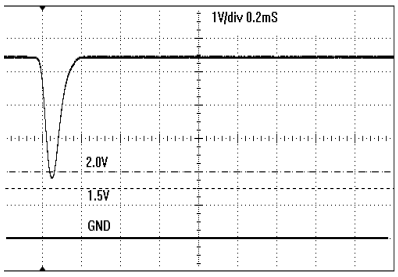
Parts not shown

	3040037	Red adjustment key
	3390550	Bag w/parts
	3397944	Foam, 1 piece
	3392621	Wrapper
	3504553	Setting-up guide

Adjustments

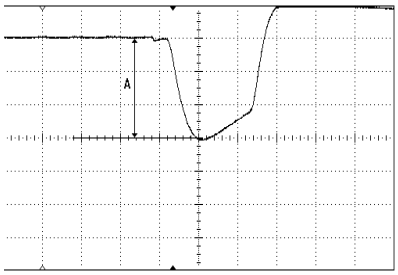
Adjustment of sensitivity of finger protection system

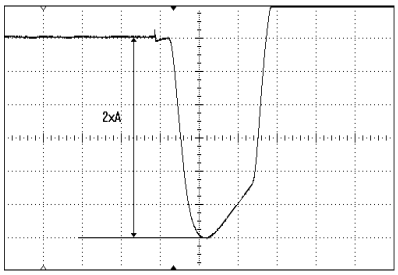
1. Install the glass lid, and close the lid. (Important!)
2. Switch off the product at the mains switch.
3. Connect an ohmmeter between ground and the middle pin on 35R365, and adjust to minimum value.
4. Connect an oscilloscope (DC) to 35CP1 (coordinate 2A).
5. Switch on the product.
6. Select CD6. The sledge will now try to move but it must stop.
7. Adjust by means of 35R365 until the bottom of the pulse is between 1.5 and 2V.



After approx. 30 seconds the pulses will disappear.

8. Switch off the mains, and then short-circuit 35CP1 to ground which is the chassis of the cooling plate.
9. Connect an oscilloscope (set to position AC) to the middle pin on 35R365.
10. Switch on the product.
11. Select CD6. The sledge will now try to move but it must stop.





12. Then measure the pulse height.
13. Now adjust by means of 35R365 until the pulse has twice the amplitude measured under point 12 above.
14. Switch off the mains. Remove the short-circuiting lead between 35CP1 and ground.
15. Switch the product back on, and select CD6. The sledge will now move quickly to the CD6 position.
16. Then select CD1 and check with a finger that the sledge is able to stop.
17. Open the glass lid.
18. Select CD6, and the sledge will now move slowly towards the CD6 position.
19. Then select CD1 and check with a finger that the sledge is able to stop.

Mechanical adjustments

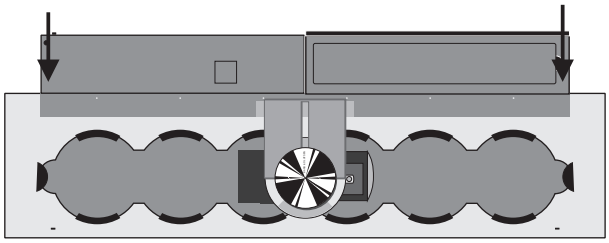
Adjustment of CD mechanism

See Brief Operation Guide, page 1.5.

Adjustment of lid

Remove the left aluminium plate (see point 2 under dismantling for further information, if necessary) and open the lid covering the secondary keyboard.

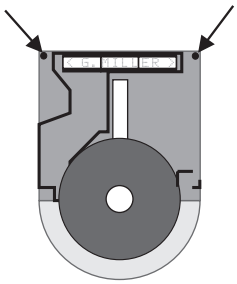
Adjust the lid until it is parallel with the top plate (15 mm).



Adjustment of clamper arm

Remove the top plate for the clamper arm (see dismantling for further information, if necessary).

Adjust the clamper until it is parallel with the top plate.



Test modes

Because of the high complexity of BeoSound 9000 MKIII it is important to use the built-in test and service functions during and after servicing the product.
A good approach to finding an error is test mode 27 in wich a report can be seen.
Remember always to execute test modes 71 and 73 after a repair situation.

TM (test mode) names/function for adjustments and service

Tuner test modes

TM 01: Automatic offset-adjustment for FM
TM 02: Manual offset-adjustment for FM
TM 03: Status for offset-adjustment
TM 04: Variant status
TM 06: Check RDS name
TM 07: Setting up of tuner variant

Master test modes

TM 20: Test of display functions
TM 21: Open ML-out
TM 22: Test of keyboard functions
TM 23: Software version
TM 24: Service operation counter
TM 25: Open ML-in
TM 27: Service of error detection
TM 28: Validity test for ROM/RAM/EEPROM
TM 31: Set default settings
TM 32: Read-out of product ID
TM 34: Read-out of options
TM 35: Power down ON
TM 36: Power down OFF

CD test modes

TM 61: Focus on
TM 62: Focus off
TM 63: Starts turntable motor
TM 64: Stops turntable motor
TM 65: Light pen to outermost position
TM 66: Light pen to the innermost position
TM 67: Starts CD
TM 68: Stops CD
TM 71: Mechanical test of finger protection, sledge and led
TM 73: Adjustment of autopositioning
TM 74: Safeguard level set to max

WRONG SRC/TM

Having selected test mode, select CD before using test modes associated with CD and select radio before using test modes assosiated with radio.
If you select a test mode that is not valid, e.g. a CD test while CD has not been selected, the display will read:
WRONG SCR/TM

Test mode activating (by Beo4)

Wait 20 - 30 sec. after connecting to mains.
Since BeoSound 9000 is in option 0 if Power Link speakers are not connected, the option has to be changed to 1.
Option 1 can be obtained by short-circuiting pins 2 and 4 on the Power Link sockets. See Brief operation guide for further information, if necessary.
By means of remote control from St.by (can only be done if the product is not in option 0) :
Press **SHIFT 9 0 2 5 8** with no more than 2 sec. between the individual entering.
The remote control has to be in RADIO or CD option.
In test modes the tuner is fully functional and may overwrite the display but the TM will continue.
Select CD to view CD test modes.

Deactivating test mode (by Beo4)

Press ● and the display shows "TESTMODE OFF" or disconnect from mains.

TM01

Automatic offset-adjustment for FM.
This is done by letting the tuner search for the frequency 100 MHz (84 MHz for Japan) and when the signal is found the offset will be calculated and stored in NVRAM. The display shows "A OFFSET".
If failure the display shows "TM ERROR".

TM02

Manual offset-adjustment for FM.
This is done by keying in a frequency.
The tuner search for this frequency and the offset will be calculated and stored in NVRAM.
The display shows "M OFFSET".
If failure the display shows "TM ERROR".

TM03

Read-out offset status.
If the offset-adjustment is needed the display shows "TM ERROR".
If the result of the offset-adjustment is positive the display shows "OFFSET n".
If the result of the offset-adjustment is negative the display shows "OFFSET -n".
The figure n is in steps of 12.5 kHz.

TM04

Read-out variant status:
EUROPA (EU) FM, EUROPA (EU) FM/AM, USA (US) and JAPAN (JP). The display shows e.g. "EU FM/AM".
If failure the display shows "TM ERROR".

TM06

Checking that the RDS name of the radio programme in question is RDS-PS.
The display shows "TM OK".
If wrong RDS name or if name is missing the display shows "TM ERROR".

TM07

Tuner variant setup:
If from EU or AUS to US:
Key in the 3 digits indicating the choice.
No. 0: 003 = variant US
No. 1: 001 = RDS on, or 000 = RDS off
No. 2: 175 = FM starts in 500 kHz
No. 3: 216 = FM stops in 500 kHz
No. 4: 075 = Deemphas in µs
No. 5: 000 = LW starts in kHz dividing with AM raster. 0 if no LW
No. 6: 000 = LW stops in kHz dividing with AM raster. 0 if no LW
No. 7: 053 = MW starts in kHz dividing with AM raster. 0 if no MW
No. 8: 171 = MW stops in kHz dividing with AM raster. 0 if no MW
No. 9: 010 = AM raster. Steps in kHz. 0 if no AM

If from US or AUS to EU.
No. 0: 001 = variant EU FM. (002 if EU FM/AM)
No. 1: 001 = RDS on, or 000 = RDS off
No. 2: 175 = FM starts in 500 kHz
No. 3: 216 = FM stops in 500 kHz
No. 4: 050 = Deemphas in µs
No. 5: 017 = LW starts in kHz dividing with AM raster. 0 if no LW
No. 6: 031 = LW stops in kHz dividing with AM raster. 0 if no LW
No. 7: 058 = MW starts in kHz dividing with AM raster. 0 if no MW
No. 8: 179 = MW stops in kHz dividing with AM raster. 0 if no MW
No. 9: 009 = AM raster. Steps in kHz. 0 if no AM

If from EU or US to AUS
No. 0: 005 = variant AUS
No. 1: 001 = RDS on, or 000 = RDS off
No. 2: 175 = FM starts in 500 kHz
No. 3: 216 = FM stops in 500 kHz
No. 4: 050 = Deemphas in µs
No. 5: 000 = LW starts in kHz dividing with AM raster. 0 if no LW
No. 6: 000 = LW stops in kHz dividing with AM raster. 0 if no LW
No. 7: 058 = MW starts in kHz dividing with AM raster. 0 if no MW
No. 8: 179 = MW stops in kHz dividing with AM raster. 0 if no MW
No. 9: 009 = AM raster. Steps in kHz. 0 if no AM

TM20

Checking the display by showing 2 types of icons in 2 rounds to test the pixels.
Press **GO** to shift between icons in the display.

TM21

Opens the signal from AUX-plug to the ML-output.

TM22

Test of key-board functions.
By pressing a key for instance **CD** the display will show "CD".
The testmode can only be ended by IR-remote control command "STOP".
This testmode can only be activated by IR-remote control command.

TM23

Read out of Software version.
Press **GO** to continue.
APP xx.xxx = Application processor. (Main CPU)
OS xx.xxx = APOS
IOP xx.xxx = I/O processor
MOT xx.xxx = Motor processor. (MOT-FEP)
TUN xx.xxx = Tuner processor. (Tuner-FEP)
CD xx.xxx = CD processor. (CD-FEP)

TM24

Service running counter.
First the Standby time will appear.
Press **GO** to toggle between the different counters.

- Standby time
- Radio-mode time
- CD-mode time
- AUX-mode time
- ML net radio time
- ML net music time
- Time with other ML source
- Theft protection active time

Number of times the theft protection has been unlocked.
Number of times the product has been powered up.
All numbers are stated at intervals of 10. (e.g. 3 = 30.)
When all counters have been shown the display will ask for a new test mode.

TM25

Opens ML-in.
A source must be selected to have a correct measurement.
Signal coming from the ML-in, exit on the PL and AUX as by normal selection.

TM27

Service Error detection.
The last registered errors regarding EEPROM, ML, IIC-bus, RS232 driver, CD, CD-sledge and lids can be readout. This test mode is also used for deleting all error-registrations.
To toggle between error indications press **GO**. When all errors are read press **GO** to reset all errors registered or press **STOP** to keep error register.
By pressing ▲ or ▼ the time of the errors will be shown.
YY.MM.DD - hh.mm.ss.
MEM: last EEPROM error.

- 02: EEPROM writes error
- 03: EEPROM reads error
- 04: EEPROM reads error only FF
- 11: EEPROM writes owerflow
- 12: EEPROM controls init fail
- 13: EEPROM controls calloc fail
- 99: EEPROM content error

ML: Last error regarding to ML.

- 08: Link tied down
  It is impossible to transmit on Master Link because it is pulled low. The error may occur if there is an error in the Master Link driver circuit, or because a short circuit has occurred on the Master Link.
- 16: Link tied up
  It is impossible to transmit on Master Link because it is pulled low.
  The error may occur either because the pull-up resistance in the system has become too low or as a result of an error in the data receiver circuit.
- 32: Configuration impossible
  Disconnect all products from the Master Link system and reconnect them one by one until the error shows up.

IIC: Component which gave the last error regarding IIC-bus.

- 102: Tuner FEP
- 104: Motor FEP
- 136: Sound Processor
- 208: Clock

SER: The last error from the RS232 driver.

- 01: CDA queue not attached
  SW communication error
- 02: CDA error timeout
  SW communication error
- 03: CDA error unknown buf addr
  Communication error. Check the bus and the components connected to it.
- 04: CDA error data expected
  Communication error. Check the bus and the components connected to it.
- 05: CDA error unknown CMD
  Communication error. Check the bus and the components connected to it.
- 06: CDA error checksum
  Communication error. Check the bus and the components connected to it.
- 07: CDA error RX timeout
  SW communication error
- 08: CDA error out of buffers
- 09: CDA error uart overrun
- 10: CDA error uart framing
- 11: CDA error uart parity

CD: CD error.

- 02: Focus error
  The CD could not focus within the time limit.
- 03: Radial error
  Set when the CD did not get on track after several retries.
- 04: Turntable motor error
  Set when the disc did not spin up or down within the time limit.
- 05: PLL lock error
  Set when PLL is out of lock during tracking mode.
- 06: Jump error
  Set when a seek could not be performed or an error occured during a binary search.
- 07: Subcode error
  Set when a subcode could not be read within the time limit.
- 08: TOC read error
  Set when the TOC could not be read, no access possible to lead-in.

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- 20: Serial communication overrun error
  Expected command byte, but received a data byte.
- 22: Serial communication noise error
  Check sum did not match.
- 23: Serial communication software error
  Queue full.
- 37: Selection error
  Unknown command

OS: Error in the operation system.
- 08: IL TLG from APOS to FEP
- 09: IL RX TX BUF limit
- 13: FEP does not exist

IO: Last error in the I/O driver.
- 01: IIC1 2 error
- 05: Cannot configure FEP
- 06: FEP communication error
- 07: IL TGL from FEP to APOS
- 08: IL TGL from APOS to FEP
- 09: Interlink RX TX BUF limit
- 14: FEP does not exist
- 33: MLSL timeout error
- 34: MLSL TX BUF full TLG does not send
- 35: ML key lost key repaired
- 36: External communication not allowed in preproject
- 37: LSL format error
- 38: LS IR format error
- 39: LSL TX imposs
- 40: LSL link tied up
- 41: LSL link tied down
- 42: Generic ICB error
- 43: ICB L7 timeout
- 44: ICB L7 illegal timeout
- 45: ICB L7 out of repositories
- 46: ICB L7 illegal L7 ack
- 47: ICB L7 Acknowledge unexpected
- 48: ICB L7 read response unexpected
- 49: ICB L7 illegal resource type
- 50: ICB L7 resource still running
- 51: ICB L7 resource already free
- 52: ICB L7 illegal IOP service
- 53: ICB L7 illegal IOP object
- 54: ICB L7 telegram flushed
- 55: ICB L7 resource disabled
- 56: ICB L7 HW clock illegal command
- 57: ICB L7 HW clock illegal event
- 58: ICB L2 retrans limit reached
- 59: IIC component disabled
- 60: CDS bus disabled
- 61: Power down of IOP impossible

AP: Application processor errors.

- 16: Illegal timer ID
- 17: Timer not free
- 21: Illegal date value
- 22: Illegal time value
- 23: Illegal timer parameters
- 32: Illegal simple message ID
- 33: Out of message buffers
- 34: Message buffer virtual limit reached
- 64: Non ISR func. called from ISR
- 65: Physical stack limit reached
- 66: Stack virtual limit reached
- 67: Out of IAS objects
- 68: IAS signal lost
- 69: Overflow in IAS FIFO
- 70: IR queue not attached
- 71: LSL queue not attached
- 72: Scan queue not attached
- 73: Active keyscan queue not attached
- 74: Uart 0 queue not attached
- 75: TIIC queue not attached
- 76: RIIC queue not attached
- 77: Out of power down callback OBJ
- 78: Power down entered with timer running
- 79: Watchdog reset

IOP: Last error in the I/O microprocessor.

- 02: ICB layer 2 timeout
- 03: ICB layer 7 illegal service
- 04 ICB layer 7 illegal object
- 05: Reg mem data frame not valid
- 06: Data frame not valid
- 07: Illegal port ID
- 08: LSL TX impossible
- 09: LSL tied up
- 10: LSL tied down
- 11: IIC slave buffer full
- 12: IIC slave transmit timeout
- 13: IIC illegal switch port
- 14: IIC2 slave addressed
- 15: IIC conditional polling timeout
- 16: IOP IIC error
- 17: PD entered while service waitning
- 18: TP ICBL7 illegal command
- 19: TP module HW error APOS
- 21: TP clock error APOS

SLG: Sledge errors.

- 13: CC info finger detected.
  The IR beam in the finger protection system has bin broken while the sledge was moving.
- 30: CC sledge pos count error.
  A counter error has been registered on the signal from the sledge tacho. It is registered at 35IC2 pin 1, 44, 5 and 9.

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- 31: CC sledge pos opto error.
  Microprocessor 35IC2 cannot register pulses from 9PE1.
- 32: CC sledge calib switch error.
  Microprocessor 35IC2 cannot register the signal REF. POS from the end stop detector at pin 20.
  This error also occurs if the tacho system is not working.
- 33: CC clamp pos error.
  The clamper cannot go to the desired position. The reason may be that it is locked or that there it is an error on PCB22, clamper position, or that the motor driver is defective.
- 38: CC current sense error.
  35IC2 pin 35 registers that the sledge uses too much current. The reason may be that the sledge is blocked or that the sledge control is defective.
- 39: CC disc detect error.
  The disk detector is not operating. Carry out test mode 71 to test the circuit.
- 40: CC sat sense error.
  35IC2 pin 37 registers that the sledge uses too much current. The reason may be that the sledge is blocked or that the sledge control is defective.
- 41: CC sledge blocked error.
  The sledge is blocked, or the power supply to the sledge control may be too low.
- 42: Finger protection is out of operation.
  The finger protection circuit is out of operation. Use test mode 71 during troubleshooting.

PLT: Lid errors.

- 17: CC info plate pos error.
  Position error. The lid may be blocked, the lid motor may be defective, or the optocouplers 37PE1 and 37PE2 may be defective.
- 37: CC door pos error / CC plate pos error.
  (Occurs during test mode 71 only) Position error. The lid may be blocked, the lid motor may be defective, or the optocouplers 37PE1 and 37PE2 may be defective.

APS: Autoposition errors.

- 10: CC info P bit not found error
  P bit has not been detected. If a CD-I Ready disc for example has been played back at some point or if there is an error in the detection circuit. The error has been detected at pin 11 of 35IC2.
- 11: CC info too many P bits.
  Too many P bits have bin detected. May be caused by scratches in the disk.
- 12: CC info TTM opto adjusted.
  Information that the turntable tacho has been adjusted. Data in EEPROM has been lost.
- 14: CC info TTM pos count error.
  An error has occurred in connection with scanning of the turntable motor position. The position is not stored in EEPROM. Optocoupler / tacho may be defective.
- 15: CC info TTM timeout error.
  It has taken more than 5 seconds to carry out autopositioning. The turntable motor driver may be defective.
- 18: CC info TTM pos opto error.
  It has not been possible to make a correct adjustment of the autopositioning circuit. The optocoupler circuit may be defective.
- 19: CC info TTM ref opto error.
  The signal ROUND REF from PCB31 IR tacho clamper RX is missing.

- 34: CC TTM pos count error.
  A counter error has occurred in connection with an adjustment (test mode 73).
  Check the signals QUAD 1 TTM and QUAD 2 TTM from PCB31 IR tacho clamper RX.
- 35: CC TTM pos opto error.
  (Occurs during test mode 73 only) It has not been possible to carry out a correct adjustment of the autopositioning circuit. The optocoupler / tacho circuit may be defective.
- 36: CC TTM ref opto error.
  (Occurs during test mode 73 only) The signal ROUND REF from PCB31 IR tacho clamper RX is missing.

PWR: Power errors.

- 20: CC power error.
  Mains drop-out while the sledge was moving.
- 100: CC motor FEP power fail.

TM28

This TM checks the function of ROM, RAM, EEPROM. (O, A, P).
To readout TM, O and A have to be (+).
E.g. MEM ++- indicates error in the EEPROM.

TM31

Default settings for sales purposes.

Option:	1
Volume:	32
Balance:	0
Bass:	0
Treble:	0
Loudness:	OFF

Radio programmes erased.
CD settings erased.
Timer settings erased.
After default settings the display shows "DEFAULT TM ERROR".
If error occurs in TM the display will show "TM ERROR".
Item-number, serial-number, type-number, master pin-code, running counter and all offset adjustments will not be erased.

TM32

ID-readout of the product.
Press **GO** to toggle between the ID-numbers.
Item no = 7 figures.
Type no = 4 figures.
Serial no = 8 figures.
Master PIN = OK or ERROR.
If error in the readout all figures = 0.

TM34

Option readout.

TM35

Power down ON.
When power down mode is possible the display = "TM OK".

TM36

Power down OFF.
When power down mode is not possible the display = "TM OK".

To use CD test modes it is necessary to select CD, in the TM the HF-signal will not be used

TM61

Focus ON.
The CD-pen will try to focus.
This TM can only be turned off by using TM62.

TM62

Focus OFF.
The CD-pen will be turned OFF.

TM63

Starts turntable motor.
In order to ensure a controlled rotation, TM61 should be completed before you activate this Test Mode.
This TM can only be turned off by using TM64.

TM64

Turns off the turntable motor.

TM65

Light pen to outermost position.
The optical pickup unit goes to the outermost position and stays there.
This TM can only be turned off by TM66. Do not give other commands in the meantime.
Display = "LIGHTPEN OUT".

TM66

Light pen to the innermost position.
The optical pickup unit goes to the innermost position and stays there.
Display = "LIGHTPEN IN".

TM67

The CD starts playing.

TM68

The CD stops playing.

TM71

Mechanical test of finger protection, sledge and led.
CDs must be loaded in positions 6, 5, 4, 3, 2 but no CD in position 1, (the position nearest the LOAD button).
The CD must be stopped and the lid must be shut when the test is activated.
The following sequence is executed:

- End stop is found, the sledge runs slowly.
  This tests sledge tacho, sledge motor, calibration of the end stop switch.
- Lid opens and closes.
  This tests optocoupler for glass lid.
- Test of finger protection circuit.
- The sledge runs the longest possible distance slowly once, then quickly twice. This tests the sledge tacho for phase errors between quad 1 and quad 2 (the finger

protection circuit is cut out during the test). When the sledge is running it must run "properly".
- The lid opens.
- Autocalibration of CD positions.
  This tests calibration, disc detector, sledge motor, sledge tacho, clamper motor, clamper optocoupler, and jaws.
  The clamper is noise-optimized during the autocalibration.
- The sledge runs to the original position, i.e. the sledge position prior to activation of sledge test.

When error in CD test mode the Error-number refers to TM27 CD-errors.

TM72

Release of sledge.
Display = "RELEASE SLG"
When test mode 72 has been used the mains voltage to the product has to be disconnected to ensure correct calibration.

TM73

Adjustment of autopositioning.
Test mode 71 must have been executed.
- Press **SHIFT 9 0 2 5 8**
- Open the lid and load a CD.
- The sledge must be placed in the position where the CD is loaded.
- Press **7 3**
- If the test is OK the display will show: APS ADJUSTED.
- If an error has occurred during the test, the applicable error code can be seen during a test mode 27.

TM74

Changing transmitter power for the finger protection circuit.
Safeguard level is set to maximum and the display show: SAFEGUARD TM
This function can only be switched off by the main switch.

Glass doors lock

The glass doors can only be locked if the product is in Standby, the glass doors closed and only by remote control.
Press **SHIFT 9 0 3 6 9** with no more than 2 sec. between the individual entering.
The display shows "LOCKED".
To unlock the glass doors press **SHIFT 9 0 3 6 9** with no more than 2 sec. between the individual entering.
The display shows "UNLOCKED".
The function will be remembered in NVRAM after disconnecting from mains.

Theft protection

The theft protection is a 4 digit PIN-code of the user's own choice, which must be entered if the product has been disconnected from the mains for 15-30 min.
The theft protection is always deactivated from the factory, it is up to the user to activate it.
If the theft protection is activated, and the product has been without mains for 15-30 minutes, the user will be asked to enter the 4 digit PIN-code.
Before the product is handed in to service it is a good idea to ask the customer to deactivate the theft protection.

Service code

If the PIN-code is activated and the product is in a service situation, there is a possibility of 12 hours service by entering a 5 digit Service code which is 11111. This gives 12 hours of full functionality to service the product and make module changes without naming/registering the exchanged modules to the Customer's product. The 12 hours are only running when the product is connected to mains!
If the customer's PIN-code or Master-code is entered the exchanged modules will be named/registered to the product. Registration of the modules cannot be changed.
The service code must be entered when a source is selected and the product asks for the PIN-code "PIN _ _ _ _" press down the ▼ button (Keyboard) for three seconds and the display now writes "PIN _ _ _ _ _", press ▼ ▲ (Keyboard) to select digit, press **OK** (Keyboard) to accept digit.

Master code

If the PIN-code has been forgotten (5 tries every 3 hours with mains connected), the only way to unlock the product again is by entering the 5 digit Master code.
The Master code can be ordered at Bang & Olufsen.
When a source is selected and the product asks for the PIN-code "PIN _ _ _ _" press down the ▼ button (Keyboard) for three seconds and the display asks for 5 digits instead of 4: "PIN _ _ _ _ _" ; enter the 5 digit Master code. Press ▼ ▲ (Keyboard) to select digit, press **OK** (Keyboard) to accept digit.

How to order Master code

The Master code is ordered by sending a request either via the Retail System or on the Master code formula, if non of these options are available please contact Bang & Olufsen.

Exchange of micro-processor module PCB3

When exchanging PCB3 remember to insert the EEPROM from the defective module, because it contains valuable data (serial no., type no., PIN-code etc.).
The data is not transferred to the new module until you have been in contact with the theft protection or after 12 hours connected with mains. This means that you can try out a new PCB3 without transferring the products serial no. etc.

Note !

When the serial no. has been transferred to the micro-processor it can only be used for this specific product. Otherwise the module must go back to Bang & Olufsen's module repair department as an exchange module to be erased again.
If the product functions are OK the theft protection is also OK; there is no need for testing the functionality of the theft protection.
When the product is connected to mains, wait 20-30 sec. before operating.
All addresses in ML hav to be updated after disconnecting mains voltage.

Exchange of software EEPROM on PCB3

When exchanging the EEPROM on PCB3, the data from the micro-processor will be written into the EEPROM when selecting any source e.g. RADIO.
It is possible to borrow an EEPROM from another BeoSound 9000 to test if there is suspicion of a fault in the original EEPROM. The EEPROM will always adopt the data from the main micro-processor.

Exchange of both micro-processor module PCB3 and software EEPROM on PCB3

If both the micro-processor and the EEPROM need to be exchanged it is necessary to have them pre-programmed from Bang & Olufsen with the correct serial number, otherwise they will not work.
Please contact Bang & Olufsen.

Important

When the product is reconnected to mains, wait 20-30 sec. before operating.
All adresses in ML hav to be updated after disconnecting mains voltage.

Set and enter PIN code

It is the customer's choice whether or not to activate the PIN code system. However, if the customer has chosen to activate the system, BeoSound 9000 is protected against theft with a four-digit PIN code.
The use of a PIN code means that if BeoSound 9000 is disconnected from the mains for more than 15-30 minutes, the system can only be activated again by keying in a personal PIN code.
If the PIN code is not entered, BeoSound 9000 automatically switches to standby after 3 minutes.
If a wrong PIN code is entered, you get five attempts to key in the code, after which the system is switched off and cannot be switched on for 3 hours.
Should you forget the PIN code, please contact a retailer who can assist you in receiving a Master code from Bang & Olufsen. You need the Master code to reactivate BeoSound 9000.

Activate the PIN code system

The PIN code system is easily activated, and you choose the four-digit code yourself.
Press **MENU** ◀◀ **STOP** (Beo4) to key in a four-digit PIN code of your own choice.
NEW PIN appears briefly, and PIN _ _ _ _ appears.
Key in a four-digit PIN code of your own choice.
The PIN code is not displayed.
Press **GO** (Beo4) to store the PIN code.
CONFIRM appears briefly, and then PIN _ _ _ _ appears. Re-enter your code. The PIN code is not displayed. Press **GO** (Beo4) to store.
STORED appears, indicating that your PIN code is stored.

Enter the PIN code

If the PIN code system is activated and your BeoSound 9000 is disconnected from the mains for more than 15-30 minutes, you are requested to key in the four-digit PIN code when the system is first switched on. The cue PIN _ _ _ _ is displayed.
Key in your personal PIN code. The PIN code is not displayed. When the four-digit code has been entered, the display returns to the relevant source e.g. RADIO 1.

Deactivate the PIN code system

You can deactivate the PIN code system at any time. All you need is to enter your PIN code first and then deactivate the system.
Press **MENU** ◀◀ **STOP** (Beo4) or press ▼ ▼ **PAUSE** buttons (Keyboard) to key in the four-digit PIN code.
PIN _ _ _ _ appears. Key in your personal four-digit PIN code.
The PIN code is not displayed. NEW PIN ? appears.
Press ▲ or ▼ (Keyboard) to switch the display. PIN OFF appears.
Press **GO** (Beo4) or **OK** (Keyboard) to deactivate the PIN code system.
DELETED appears, indicating that the PIN code system is deactivated.

If you have forgotten your PIN code

If you have forgotten your PIN code, you must contact a retailer who then requests a five-digit Master code from Bang & Olufsen. Once you have keyed in this code, your BeoSound 9000 is operational again and the PIN code system is deactivated.
The cue PIN _ _ _ _ is displayed.
Press down the ▼ button (Keyboard) for three seconds and the display asks for 5 digits instead of 4: "PIN _ _ _ _ _" ; enter the 5 digit Master code. DELETED appears, indicating that the PIN code system is deactivated and the set is ready for use.

Change PIN code

The PIN code can be changed at any time. However, for security reasons it is only possible to change the PIN code five times within a period of 3 hours.
Press **MENU** ◀◀ **STOP** (Beo4) or press ▼ ▼ **PAUSE** buttons (Keyboard) to key in the four-digit PIN code.
PIN _ _ _ _ appears.
Key in your personal PIN code.
The PIN code is not displayed.
NEW PIN ? appears.
Press **GO** (Beo4) or **OK** (KeyBoard) to enter a new PIN code.
PIN _ _ _ _ appears.
Key in the new PIN code. The PIN code is not displayed.
Press **GO** (Beo4) or **OK** (KeyBoard) to store.
CONFIRM appears briefly, and then PIN _ _ _ _ appears.
Re-enter the new PIN code. The PIN code is not displayed.
Press **GO** (Beo4) or **OK** (KeyBoard) to store. STORED appears, indicating that your changed PIN code is stored.

Replacement of components

Exchange of microprocessor module PCB3

When exchanging PCB3 remember to insert the EEPROM from the defective module, because it contains valuable data (serial no., type no., PIN-code etc.).
The data is not transferred to the new module untill you have been in contact with the theft protection or after 12 hours connected with mains. This means that you can try out a new PCB3 without transferring the products serial no. Etc..

Note !

When the serial no. has been transferred to the micro-processor it can only be used for this specific product; it must go back to Bang & Olufsen's module repair department as an exchange module to be erased again.
If the product functions are OK the theft protection is also OK; there is no need for testing the functionality of the theft protection.
When the product is connected to mains, wait 20-30 sec. before operating.
All addresses in ML has to be updated after disconnecting mains voltage.

Exchange of software EEPROM on PCB3

When exchanging the EEPROM on PCB3, the data from the micro-processor will be written into the EEPROM when selecting any source e.g. RADIO.
It is possible to borrow an EEPROM from another BeoSound 9000 to test if there is suspicion of a fault in the original EEPROM. The EEPROM will always adopt the data from the main micro-processor.

Exchange of both micro-processor module PCB3 and software EEPROM on PCB3

If both the micro-processor and the EEPROM need to be exchanged it is necessary to have them pre-programmed from Bang & Olufsen with the correct serial number, otherwise they will not work.
Please contact Bang & Olufsen.

Replacement of 7DP1, 7DP2 or 7DP3

When display 7DP1, 7DP2 or 7DP3 is replaced, all three displays must be replaced to ensure an uniform light intensity.

Replacement of 29IL1 and 7IL1

When 29IL1 or 7IL1 is replaced, both light bulbs must be replaced.

Replacement of light indicator

When either Light indicator PCB's is replaced, it must be fixed again with double-sided adhesive tape.

Replacement of PCB35, PCB27, PCB28 and the mechanical parts of the finger protection system

Remember to carry out adjustment of the sensitivity of the finger protection system.

Repair tips

Voltage to sledge motor

Disconnect the voltage supply to the sledge motor while servicing (lift 35P53).

Repair of autopositioning

TM73 is used in connection with repair of autopositioning. The circuit can be measured each time the test is run. Use a storage oscilloscope, if necessary.

Only the signals SWAB and SDAB can be measured during lead-in, i.e. during ordinary play-back of a CD.

Autopositioning errors of less than 5 degrees may occur in rare cases.

Why does the product not work?

If the product does not work, the reason may be one of the following:

When the glass lid is not installed the sledge may stop during movement. That is because the IR beam in the finger protection system transmits at reduced power when the lid is closed. Run the lid hinges to the open position for maximum IR transmitter power (see test mode 74, if required).

A lid acknowledgment must be given for the product to operate. The lid may be subject to an adjustment error so than no acknowledgment is received.

If the finger protection beam is broken, the sledge cannot move.

If end stops have not been detected, the product will not operate.

If the optocouplers is the product are affected by external light the product will not operate.

CD

In connection with repair of the CD the following tips may be useful:

THE PHOTO DIODES AND THE LASER ARE MORE SENSITIVE TO STATIC ELECTRICITY THAN THE MOS IC'S. OMISSION TO TAKE THIS INTO CONSIDERATION DURING SERVICING MAY REDUCE THEIR LIVES DRAMATICALLY. SO BE SURE THAT THE WORK SITE IS PROTECTED AGAINST STATIC ELECTRICITY.

The product may not be connected to the mains while the CD mechanism or PCB41 are removed.

Focus can be checked by placing a CD over the light pen. The light pen will now "follow" the CD (up/down).

In normal operation the CD will first search for Focus, and when that has been found it will start the turntable motor, i.e. if the motor cannot start, the reason may be that focus has not been found.

The CD can run without clamper and disc detector. In test mode select CD as source. Move the sledge to position 1, disconnect the voltage supply to the sledge motor while servicing the CD (lift 35P53), load a CD, press CD, and the CD can now be played back.

By using one of the flat cables provided at the back of the service manual (type 252x - 3538847 or order no. 6277184) the display can be engaged by connecting 7P63 and 34P8.

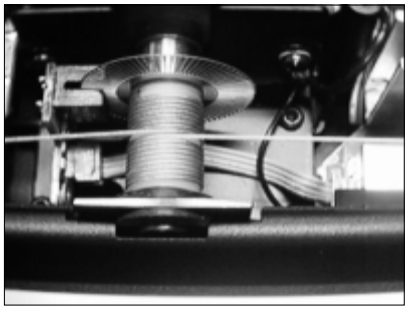
In connection with test modes the CD has reduced operation.

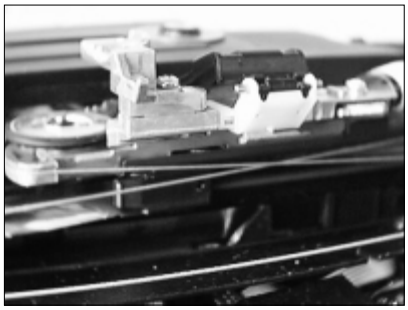
If the clamper arm is not installed, no tacho pulses will come from the autopositioning system, and the turntable motor may therefore run in the reverse direction.

SLEDGE

In connection with repair of the sledge function the following tips may be useful:

The wire for the sledge must be placed correctly; otherwise periodic errors may occur.



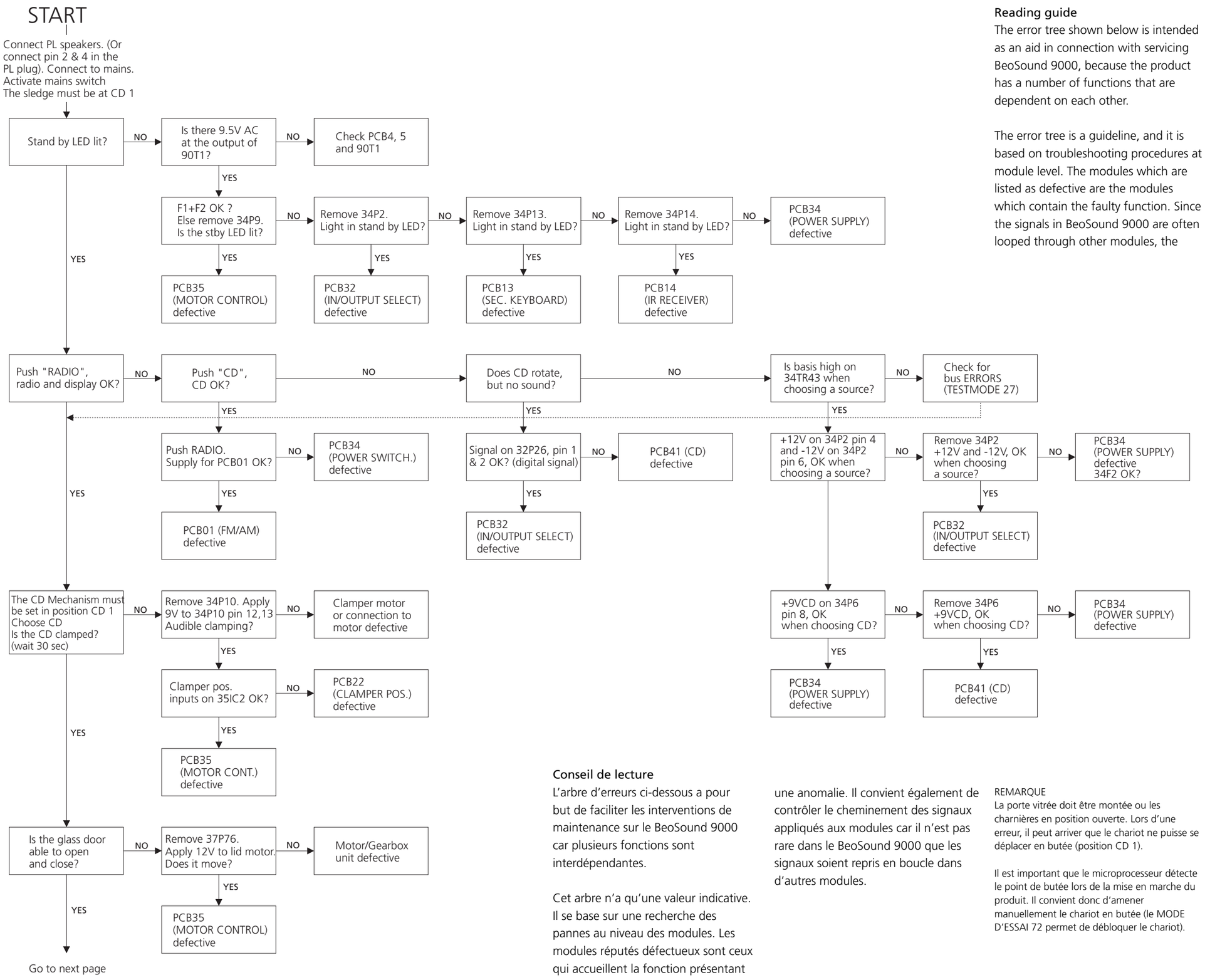


GLASS LID

The glass lid may be "pulled" out of mesh. The product has been designed in that way in order to allow the customer to remove his CD's without switching on the power supply to the product.

MISCELLANEOUS

When replacing the top, the number label must be transferred to the new top.


START
Connect PL speakers. (Or connect pin 2 & 4 in the PL plug). Connect to mains. Activate mains switch
The sledge must be at CD 1
Stand by LED lit?
NO
Is there 9.5V AC at the output of 90T1?
NO
Check PCB4, 5 and 90T1
YES
F1+F2 OK ? Else remove 34P9. Is the stby LED lit?
NO
Remove 34P2. Light in stand by LED?
NO
Remove 34P13. Light in stand by LED?
NO
Remove 34P14. Light in stand by LED?
NO
PCB34 (POWER SUPPLY) defective
YES
PCB35 (MOTOR CONTROL) defective
PCB32 (IN/OUTPUT SELECT) defective
PCB13 (SEC. KEYBOARD) defective
PCB14 (IR RECEIVER) defective
YES
Push "RADIO", radio and display OK?
NO
Push "CD", CD OK?
NO
Does CD rotate, but no sound?
NO
Is basis high on 34TR43 when choosing a source?
NO
Check for bus ERRORS (TESTMODE 27)
YES
Push RADIO. Supply for PCB01 OK?
NO
PCB34 (POWER SWITCH.) defective
Signal on 32P26, pin 1 & 2 OK? (digital signal)
NO
PCB41 (CD) defective
+12V on 34P2 pin 4 and -12V on 34P2 pin 6, OK when choosing a source?
NO
Remove 34P2 +12V and -12V, OK when choosing a source?
NO
PCB34 (POWER SUPPLY) defective 34F2 OK?
YES
PCB01 (FM/AM) defective
PCB32 (IN/OUTPUT SELECT) defective
PCB32 (IN/OUTPUT SELECT) defective
The CD Mechanism must be set in position CD 1 Choose CD Is the CD clamped? (wait 30 sec)
NO
Remove 34P10. Apply 9V to 34P10 pin 12,13 Audible clamping?
NO
Clamper motor or connection to motor defective
+9VCD on 34P6 pin 8, OK when choosing CD?
NO
Remove 34P6 +9VCD, OK when choosing CD?
NO
PCB34 (POWER SUPPLY) defective
YES
Clamper pos. inputs on 35IC2 OK?
NO
PCB22 (CLAMPER POS.) defective
PCB34 (POWER SUPPLY) defective
PCB41 (CD) defective
PCB35 (MOTOR CONT.) defective
Is the glass door able to open and close?
NO
Remove 37P76. Apply 12V to lid motor. Does it move?
NO
Motor/Gearbox unit defective
PCB35 (MOTOR CONTROL) defective
Go to next page

Reading guide

The error tree shown below is intended as an aid in connection with servicing BeoSound 9000, because the product has a number of functions that are dependent on each other.

The error tree is a guideline, and it is based on troubleshooting procedures at module level. The modules which are listed as defective are the modules which contain the faulty function. Since the signals in BeoSound 9000 are often looped through other modules, the signal paths to the modules also have to be checked.

NOTE:
The glass lid must either be on, or the hinge for the lid must be in the open position.
In a fault situation the sledge may be unable to move to its end stop (CD 1 position).

End stop detection is important for the microprocessor when powering up the product. Therefore the sledge should manually be brought to the end stop position (the sledge is released in TEST MODE 72).

Anleitung

Der unten gezeigte Fehlerbaum ist als eine Hilfe im Zusammenhang mit der Wartung des BeoSound 9000 gedacht, indem nämlich eine Reihe von Funktionen voneinander abhängig ist.

Der Fehlerbaum dient als Anleitung und basiert auf Fehlersuche auf Modulebene. Die Module, die als fehlerhaft angegeben werden, sind die Module, auf denen sich die defekte Funktion untergebracht ist. Da die Signale im BeoSound 9000 oft durch andere Module hindurchgeschleift werden, sind die jeweiligen Signalwege zu den Modulen ebenfalls zu kontrollieren.

HINWEIS!
Entweder muß die Glastür montiert sein oder die Türscharniere müssen in Position ‘offen’ stehen. Bei Fehlern kann es vorkommen, daß sich der Schlitten nicht ganz bis zum Endschalter (CD 1 Position) bewegen kann.

Die Erkennung der Endschalterposition ist für den Mikroprozessor bei jeder Inbetriebnahme des Produktes wichtig. Deshalb muß der Schlitten evtl. von Hand zur Endschalterposition bewegt werden (der Schlitten wird in TEST MODE 72 gelöst).

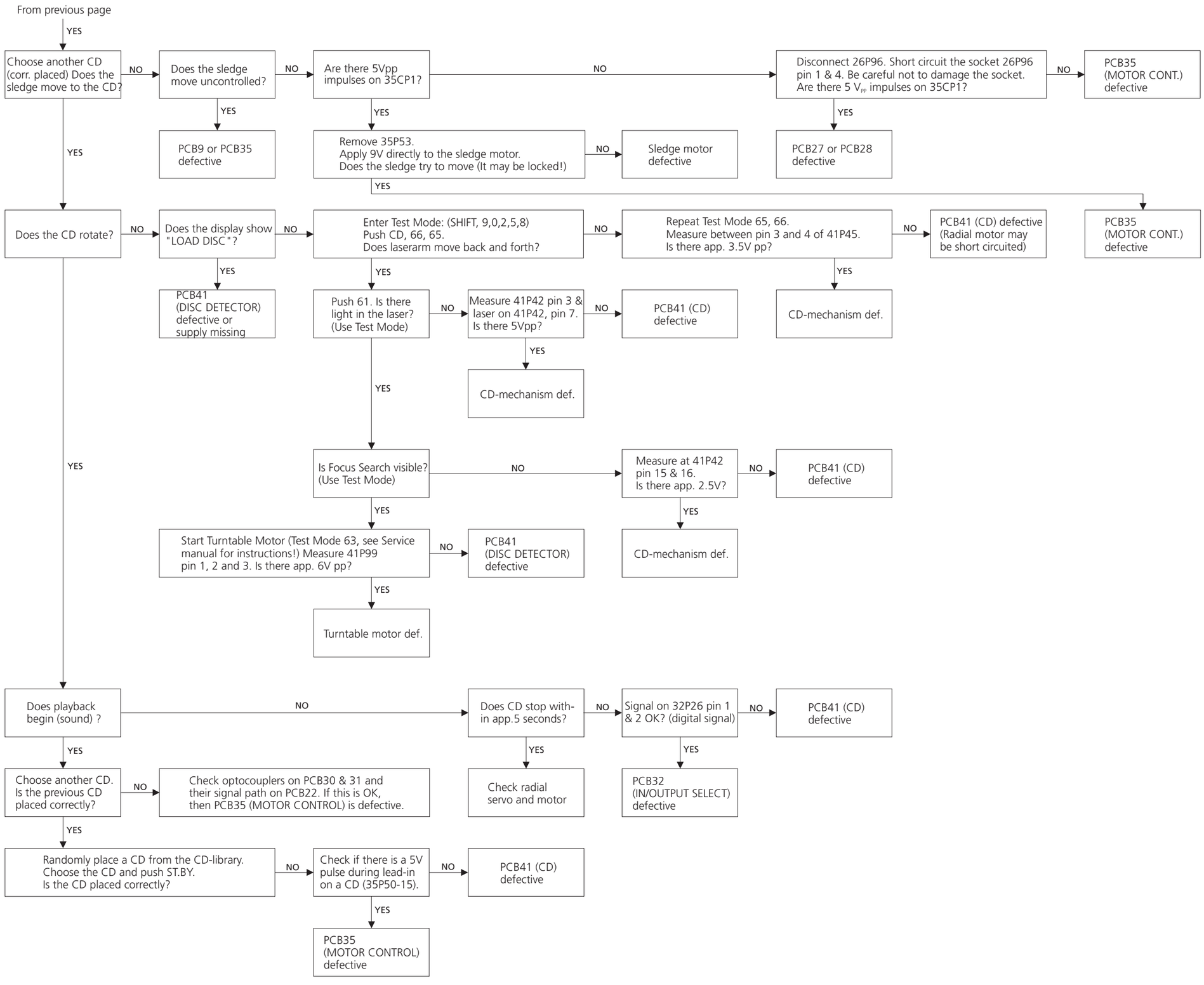
Conseil de lecture

L’arbre d’erreurs ci-dessous a pour but de faciliter les interventions de maintenance sur le BeoSound 9000 car plusieurs fonctions sont interdépendantes.

Cet arbre n’a qu’une valeur indicative. Il se base sur une recherche des pannes au niveau des modules. Les modules réputés défectueux sont ceux qui accueillent la fonction présentant une anomalie. Il convient également de contrôler le cheminement des signaux appliqués aux modules car il n’est pas rare dans le BeoSound 9000 que les signaux soient repris en boucle dans d’autres modules.

REMARQUE
La porte vitrée doit être montée ou les charnières en position ouverte. Lors d’une erreur, il peut arriver que le chariot ne puisse se déplacer en butée (position CD 1).

Il est important que le microprocesseur détecte le point de butée lors de la mise en marche du produit. Il convient donc d’amener manuellement le chariot en butée (le MODE D’ESSAI 72 permet de débloquer le chariot).


From previous page
YES
Choose another CD (corr. placed) Does the sledge move to the CD?
NO
Does the sledge move uncontrolled?
NO
Are there 5Vpp impulses on 35CP1?
NO
Disconnect 26P96. Short circuit the socket 26P96 pin 1 & 4. Be careful not to damage the socket. Are there 5 V_{PP} impulses on 35CP1?
NO
PCB35 (MOTOR CONT.) defective
YES
PCB9 or PCB35 defective
YES
Remove 35P53. Apply 9V directly to the sledge motor. Does the sledge try to move (It may be locked!)
NO
Sledge motor defective
YES
PCB27 or PCB28 defective
YES
Does the CD rotate?
NO
Does the display show "LOAD DISC"?
NO
Enter Test Mode: (SHIFT, 9,0,2,5,8) Push CD, 66, 65. Does laserarm move back and forth?
NO
Repeat Test Mode 65, 66. Measure between pin 3 and 4 of 41P45. Is there app. 3.5V pp?
NO
PCB41 (CD) defective (Radial motor may be short circuited)
YES
PCB41 (DISC DETECTOR) defective or supply missing
YES
Push 61. Is there light in the laser? (Use Test Mode)
NO
Measure 41P42 pin 3 & laser on 41P42, pin 7. Is there 5Vpp?
NO
PCB41 (CD) defective
YES
CD-mechanism def.
YES
CD-mechanism def.
YES
Is Focus Search visible? (Use Test Mode)
NO
Measure at 41P42 pin 15 & 16. Is there app. 2.5V?
NO
PCB41 (CD) defective
YES
Start Turntable Motor (Test Mode 63, see Service manual for instructions!) Measure 41P99 pin 1, 2 and 3. Is there app. 6V pp?
NO
PCB41 (DISC DETECTOR) defective
YES
CD-mechanism def.
YES
Turntable motor def.
YES
Does playback begin (sound) ?
NO
Does CD stop within app.5 seconds?
NO
Signal on 32P26 pin 1 & 2 OK? (digital signal)
NO
PCB41 (CD) defective
YES
Choose another CD. Is the previous CD placed correctly?
NO
Check optocouplers on PCB30 & 31 and their signal path on PCB22. If this is OK, then PCB35 (MOTOR CONTROL) is defective.
YES
Check radial servo and motor
YES
PCB32 (IN/OUTPUT SELECT) defective
YES
Randomly place a CD from the CD-library. Choose the CD and push ST.BY. Is the CD placed correctly?
NO
Check if there is a 5V pulse during lead-in on a CD (35P50-15).
NO
PCB41 (CD) defective
YES
PCB35 (MOTOR CONTROL) defective

Dismantling and assembly

READING GUIDE

BeoSound 9000 has a high level of integration of mechanics and electronics. To achieve optimum servicing it is therefore important to follow these dismantling instructions carefully when servicing the product.

The dismantling instructions are divided into two main sections:

a) A section that describes how to gain access to the individual modules. This section includes a description of the mechanical parts that have to be dismantled.

b) A section that describes how to remove/dismantle the individual mechanical/ electrical parts:

1. Glass lid
2. Left aluminium plate
3. Release of sledge
4. Cover for chassis top plate
5. Chassis top plate
6. Cover for CD clamper
7. Top plate for CD mechanism
8. Clamper arm
9. CD mechanism
10. Top plate
11. Sledge and ribbon cables
12. Sledge motor and wires
13. Gearbox
14. Rear panel

Remember always to execute TEST MODES 71 + 73, after a repair. When the product has been assembled, check the finger protection system by interrupting the IR beam between the two "towers".
If the optocouplers is the product are affected by external light the product will not operate. If the optocouplers is the product are affected by external light the product will not operate.

ACCESS TO THE INDIVIDUAL MODULES

PCB1 FM/AM, RF IF Decoder

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Lift up the PCB for service.

PCB3 Main microcomputer

- See PCB34.

PCB4 Mains Filter

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- The PCB is placed in service position.

PCB5 Mains Relay

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Remove the screw for the cover over PCB5. Take off the cover. Do not cut the Tyrap.
- Remove the leads in 5P82 and 5P84, and loosen the lead between 5P83 and 34P16. Make sure that the lead does not obstruct the wire.

PCB7 Display

- Carry out the points 1 and 6 to 8.
- If necessary, use one of the cables supplied at the back of the service manual during servicing. Connect it between 34P8 and 7P63.
- Please note that the sledge runs at high speed when switching among the individual CD's.

PCB9 Sledge Position

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- The PCB is placed in service position.

PCB11 Main Keyboard, left

- Carry out point 10.
- The PCB can be lifted up.
- Remember the chassis spring when reassembling.

PCB12 Main Keyboard, right

- Carry out point 10.
- The PCB can be lifted up.
- Remember the chassis spring when reassembling.

PCB13 Secondary Keyboard

- Carry out points 1 to 5.
- Remove one screw on the PCB.

PCB14 IR Receiver

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor, and 26P96.
- Remove the screws for the top plate (C, D, E) (see under point 10), lift the top plate carefully (approx. 2 cm), and carefully pull the top plate a little to the right.
- Remove two screws for PCB14 and lift off the PCB.

PCB20 Master Link Interface

- See PCB32.

PCB21 Headphones

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor, and 26P96.
- Remove the screws for the top plate (C, D, E) (see under point 10), lift the top plate carefully (approx. 2 cm), and carefully pull the top plate a little to the right.
- Remove one screw. PCB21 can now be pulled up.
- When reassembling, make sure that the leads do not obstruct the sledge.

PCB22 Clamper Position

- Carry out point 14.

PCB24 Light indication right

- Carry out points 1 to 5.
- The diodes can be removed through the "front".
- The PCB is riveted to the chassis top plate and cannot be removed any further. If the PCB is removed, it MUST be fixed again with double-sided adhesive tape.

PCB25 Light indication left

- Carry out points 1 to 5.
- The diodes can be removed through the "front".
- The PCB is riveted to the chassis top plate and cannot be removed any further. If the PCB is removed, it MUST be fixed again with double-sided adhesive tape.

PCB26 End stop detector

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Remove 26P96 and 26P75. The PCB holder can now be lifted up.

PCB27 Safety TX

- Carry out points 1 to 8.
- Remove 35P53, power supply for sledge motor, and 26P96.
- Remove the screws for the top plate (see under point 10). Carefully pull the top plate towards the right. PCB27 is fixed under the top with a screw.

PCB28 Safety RX

- Carry out points 1 to 8.
- Remove 35P53, power supply for sledge motor, and 26P96.
- Remove the screws for the top plate (see under point 10). Carefully pull the top plate towards the right. PCB28 is fixed under the top with a screw.

PCB29 Lamp

- Carry out point 1 and the points 6 to 8.
- Remove one screw for the PCB.
- Please note that the sledge runs at high speed when switching among the individual CD's.

PCB30 IR transmitter, tacho clamper

- Carry out points 1 and 6 and 7.
- Remove PCB29 and push up the Tacho holder. It is now possible to unclip PCB30.
- Please note that the sledge runs at high speed when switching among the individual CD´s.

PCB31 IR receiver, tacho clamper

- Carry out point 1 and points 6 to 8.
- Remove PCB29 and push up the Tacho holder. Push out the PCB via the two small holes from the opposite side of the Tacho holder.
- Please note that the sledge runs at high speed when switching among the individual CD´s.

PCB32 Input/output Select and Sound adjustment

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Remove PCB1. Push in the clip on the right-hand side and lift up (at a slant) the PCB for service.
  P24, Headphones, may be removed if necessary.

PCB34 Microcomputer and Power Supply

- Carry out points 1 to 5.
- Remove 35P53, power supply for sledge motor.
- Remove the plastic screen over the flex cables from the sledge.
- Lift up PCB34 and PCB35 simultaneously - watch out for the flex cables. Lift up PCB34 and PCB35 at the rear edge of the product.
- When carrying out service, lift up PCB34 and PCB35 and place them against the rear edge of the chassis. Make sure that the wire is able to run.
- The connection between 9P78 and 35P52 can be re-established by means of the cable supplied in the plastic pocket at the very back of the service guide.
- When returning PCB34 and PCB35 to their places, make sure that no leads get jammed.

PCB35 Motor control

- See PCB34.

PCB37 Lid Motor

- Carry out point 13.
- Unsolder the leads for the motor.
- Remove three screws on the flange with the motor.

PCB41 CD

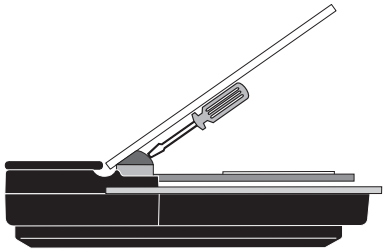
- Carry out points 1 to 8.
- Remove 35P53, power supply for sledge motor.
- Remove the two screws for the cover for the CD PCB.
- Remove the two screws that hold PCB41, CD, and tilt PCB41 over to the side.
- Make sure that the ribbon cables do not get into contact with the CD.
- Push the sledge into position.

MECHANICAL/ELECTRICAL DISMANTLING

1. Glass lid

- Open the glass lid. The lid can be forced up if necessary.
- Disconnect the mains voltage.
- First loosen the screw on the left-hand side (approx. 3 turns).
- Hold the left-hand side of the glass while loosening the screw on the right-hand side.
- Lift off the glass.
- Tighten the screws again, otherwise the screws will damage the top plate when the lid function is activated.
- WHEN THE GLASS LID HAS BEEN REMOVED THE SLEDGE IS ONLY ABLE TO RUN WHEN THE LID HINGES ARE IN THE OPEN POSITION. (SEE TEST MODE 74, IF REQUIRED).
- Check finger protection after assembly.

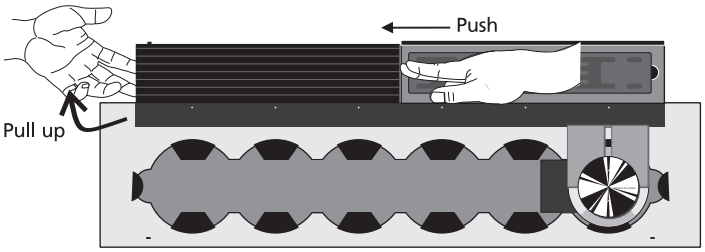
Fig. 1



2. Left aluminium plate (grooved profile)

- Lift the front edge on the left-hand side, push the plate to the left (it fits tightly), and lift it off.

Fig. 2



3. Release of sledge

- The sledge can be released in four different ways:

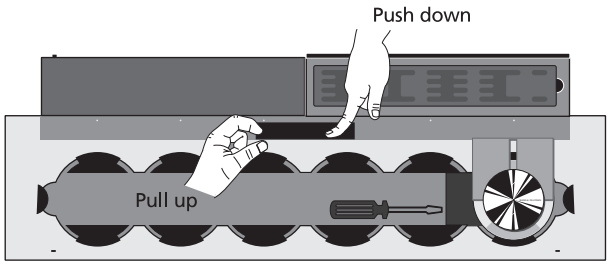
a) With the product switched on.
- Carry out point 1.
- Carry out test mode 72 (CD72, see TESTMODES page 5.13).

b) If the product cannot be switched on.
- Turn the big gearwheel under the sledge (in the middle on the left-hand side) clockwise. Use a screw driver, if necessary (be careful not to scratch the bottom), Fig. 3.
- Or point c.

c) If the product cannot be switched on and the sledge is placed in positions 5 or 6.
- Carry out points 6 to 8.
- Remove the two screws for the cover for the CD PCB. Remove the cover by pulling it to the left.
- Remove the plug for the clamper motor (41P45).
- The clamper motor terminals are now accessible. Apply +9V DC. The sledge will now be released.

d) If the sledge is placed in position 6 and cannot be moved.
- Remove the rear panel of the product, see point 14. The sledge is released by turning the big gearwheel.

Fig. 3



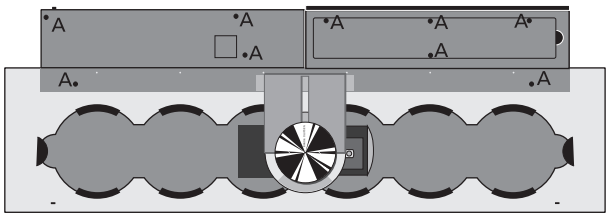
4. Cover for chassis top plate

- Carry out points 1 to 3.
- Push down the cover, tilt it out, and take it up, Fig. 3.
- Push the sledge into the notch that has been created.

5. Chassis top plate

- Carry out points 1 - 4.
- Switch off the product.
- Lift out the operating panel, and remove the nine screws marked A.
- Lift up and tilt backwards.

Fig. 4



6. Cover for CD clamper

- Turn the cover until BANG & OLUFSEN is aligned with the hole, and then lift it off, see Fig. 4.

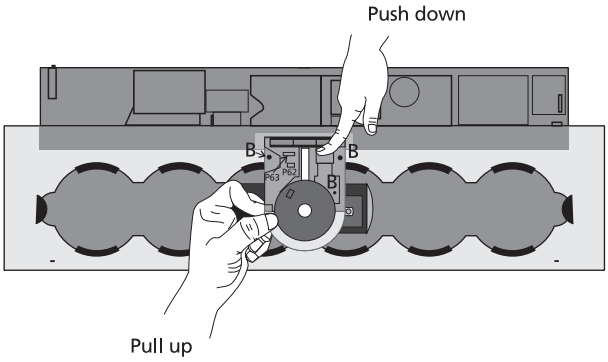
7. Top plate for CD mechanism

- Carry out point 1 and point 6.
- Lift off the plate (it has some small barbs that hold it back).

8. Clamper arm

- Carry out point 1 as well as points 6 and 7.
- Remove the three screws marked B and two flat springs.
- Loosen 7P62 and 7P63.
- Push down the clamper holder and then lift.

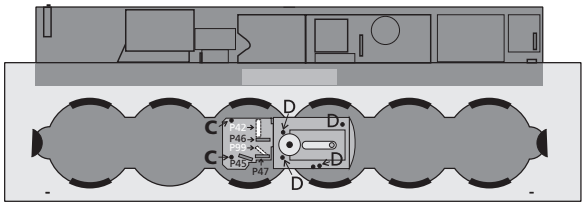
Fig. 5



9. CD mechanism

- Carry out points 1 and 3 as well as points 6 to 8.
- Remove two screws from the cover over the CD mechanism.
- Lift the cover on the left-hand side and push it towards the right.
- Remove the two screws (C) for the cover of the CD PCB. Remove the cover by pulling it towards the left.
- Remove two screws for PCB41, CD.
- Lift up PCB41 a little and remove P99.
- Remove one screw for the bracket on the CD mechanism.
- Remove the four screws (D) that hold the CD mechanism.
- Lift up the CD mechanism a little and loosen the flex cable. Watch out for the flex cable under the CD mechanism; the cable runs under the arm for the tension springs.

Fig. 6



10. Top plate

- Carry out the points 1 to 8.
- Remove 35P53, power supply for sledge motor.
- Remove two screws (E) for the clamper holder, and remove the holder, Fig. 8.
- Remove the six plugs with a thin hook or a similar object.
- Remove the six screws in the bottom (F), and loosen the two screws (G) (approx. six turns), Fig. 7.
- PLACE THE SLEDGE AT THE CENTRE.
- Loosen 26P96.
- The top can now be removed by pulling it towards the right while holding the sledge. It will be released from the sledge automatically when it reaches the end.
- LIFT THE TOP PLATE AS LITTLE AS POSSIBLE AND VERY CAREFULLY IN ORDER TO AVOID DAMAGING THE RIBBON CABLE AND STEEL BAND FOR THE SLEDGE.
- IT IS IMPORTANT TO HOLD ON TO THE SLEDGE. THE WIRE SYSTEM HAS BEEN "TIGHTENED" SO THAT IT IS VERY TIGHT.
- Remove the plastic strip over the well containing the ribbon cables and the wires by lifting up the strip.
- Place the sledge at the centre of the product.
- Instal the red holder on the bracket for wires/cable, Fig. 9.
- Loosen the spring on the right-hand side of the product, if necessary. The spring is very tight. Be careful not to let the sledge turn around.

Fig. 7

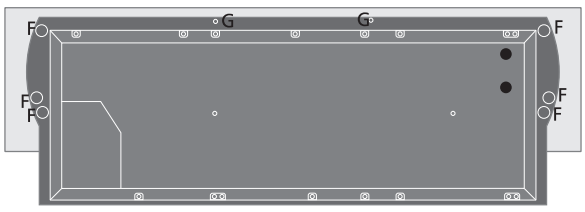
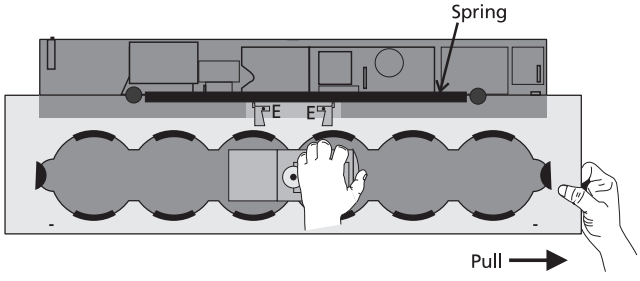


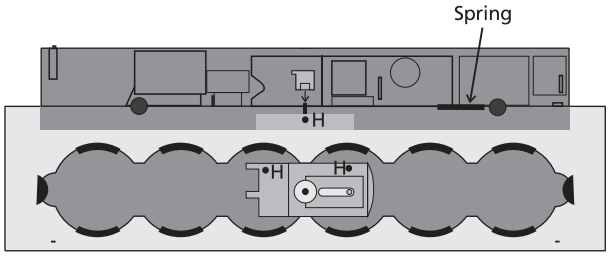
Fig. 8



11. Sledge and ribbon cables

- Carry out the points 1 to 8, and remove the screws for the top plate (C, D, E), see point 10.
- Remove the plastic strip over the well containing the ribbon cables and the wires by lifting up the strip.
- Instal the red holder on the bracket for wires/cable, Fig. 9.
- Remove two screws from the cover over the CD mechanism.
- Lift the cover on the left-hand side and push it towards the right.
- Remove the two screws for the cover for the CD PCB. Remove the cover.
- Loosen 41P46 and 41P47, Fig. 6.
- Remove 35P53, power supply for the sledge motor.
- Remove three screws (H) for the bracket for wires/cable, Fig. 9.
- Loosen 26P96.
- Lift up the top plate with the sledge carefully. Look out for the lead and ribbon cables.
- Place a holder, perhaps a Tyrap, around the wire drive by the motor.
- Loosen the spring on the right-hand side of the product. The spring is very tight. Be careful not to let the sledge turn around.
- When the reassembly has been completed the sledge must not catch when it is moved while it is being pushed down at the same time.

Fig. 9



12. Sledge motor and wire drive

- Carry out point 11.
- Remove the wires from the sledge.
- Remove three screws and lift up the motor section.
- Watch out for the tacho disc.
- Assembly, if necessary see pictures on page 5.19.

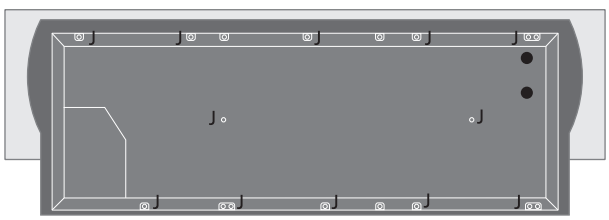
13. Gearbox

- Carry out the points 1 - 5.
- Remove four screws. The gearbox can now be lifted out.
- Remember to instal the chassis spring when the product is reassembled. The pointed end must be facing the top plate.

14. Rear panel

- Remove twelve screws (J) and lift it off. Watch out for the 8 ground connections .
- When the rear panel is installed the product must not be upside down. Place it in upright position, for example.

Fig. 10



Insulation test

Each set must be insulation tested after having been dismantled. Make the test when the set has been reassembled and is ready to be returned to the customer.

Flashovers must not occur during the testing procedure!

Make the insulation test as follows:
Short-circuit the two pins of the mains plug and connect them to one of the terminals of the insulation tester.Connect the other terminal of the insulation tester to ground on the FM-aerial socket.

NOTE!
To avoid damaging the set it is essential that both terminals of the insulation tester have good contact.

Slowly turn the voltage control of the insulation tester until a voltage of 2.5kV is obtained. Maintain that voltage for one second, then slowly turn it down again.

During the testing the current must not exceed 10 mA.

Isolationsprüfung

Nach einer Zerlegung ist bei jedem Gerät eine Isolationsprüfung vorzunehmen. Die Prüfung wird dann ausgeführt, wenn das Gerät wieder vollständig zusammengebaut und zur Auslieferung an den Kunden bereit ist.

Überschläge dürfen während der Prüfung nicht vorkommen!

Die Isolationsprüfung in folgender Weise durchführen:
Die beiden Steckerstifte am Netzstecker kurzschließen und an eine der Anschlußklemmen des Isolationsprüfers anschließen. Die andere Anschlussklemme des Isolationsprüfers an die Masse des FM-Antennenanschlußes anschließen.

ACHTUNG!
Um Beschädigungen des Gerätes zu vermeiden, ist es wichtig, daß beide Anschlußklemmen des Isolationsprüfers einen sehr guten Kontakt haben.

Die Spannungsregelung des Isolationsprüfers langsam nach oben drehen, bis eine Spannung von 2,5kV erreicht wird. Diese Einstellung 1 Sekund aufrechter-halten, und anschließend die Spannung wieder langsam nach unten drehen.

Der Strom darf während der Prüfung nicht 10 mA übersteigen.